Master’s Thesis:

A fitness for purpose warranty in construction projects under English law and such concept’s interpretation under Danish law

Subject area: Drafting and Negotiating International Contracts

Problem formulation: What are the content and limitations of the contractor’s fitness for purpose obligation in the construction projects?

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Abstract

One of the main interests of employers in construction and engineering projects is to have the completed works (be it a building, another structure or design materials) of the highest quality and defect-free. One of the criteria commonly used to assess the end result under a construction contract is verifying whether it fits its purpose – for example, suitable for inhabitation and climate conditions. Therefore, the contractors in common law jurisdiction often warrant that the works will fit their purpose. This thesis aims to ascertain the content and limitations of such a fitness for purpose warranty of a contractor in construction projects.

The research focuses on English law, which is analysed by applying the traditional legal dogmatic method. Since it became common to use “common law inspired” contract forms in projects within civil law jurisdiction, a brief analysis of how a fitness for purpose obligation could be interpreted under Danish law is also made.

Firstly, the nature of a fitness for purpose warranty, including the contractor’s liability basis, is analysed within the context of other contractor’s duties. The role of the agreed purpose of works and other contractor’s contractual obligations in determining the actual content of a warranty has been researched.

Secondly, it has been demonstrated whether a fitness for purpose warranty can be implied under English law concerning the materials, design or the works as a whole.

Thirdly, some of the factors limiting or even excluding the application of a fitness for purpose obligation in English law are investigated, which include subjecting this warranty to other obligations or liability standards (such as reasonable skill and care), lack of the employer’s reliance on the contractor’s skills and judgment or the contractual scope of works.

Finally, the main liability basis with regard to contractors’ performance under Danish law is determined. It has been further concluded that a common law fitness for purpose obligation may be interpreted as a warranty (in Danish – “garanti”) under Danish law. However, the research shows the difference of its scope with the English law concept and answers whether it could ever be implied by law.
Table of Contents

Abstract ................................................................................................................................. 2

List of abbreviations ............................................................................................................ 5

1 Introduction ....................................................................................................................... 6

1.1 Background .................................................................................................................. 6

1.2 Research question and delimitation .............................................................................. 7

1.3 Methodology and sources ............................................................................................ 8

1.4 Structure ...................................................................................................................... 10

2 A general overview of performance standards ................................................................. 11

2.1 Common law approach ............................................................................................... 11

2.2 Civil law approach ....................................................................................................... 13

2.2.1 Obligation to achieve results or the obligation to make the best efforts .................. 13

2.2.2 Fitness for purpose concept in civil law jurisdictions ............................................... 14

3 What is the content of a fit for purpose obligation under English law? ....................... 16

3.1 A fitness for purpose concept under English law ....................................................... 16

3.1.1 The nature and construction of the fitness for purpose duty .................................. 16

3.1.2 Fitness for purpose duty and obligation to comply with employer’s requirements ... 19

3.1.3 State of the art defence ............................................................................................ 23

3.2 Design's fitness for purpose ...................................................................................... 25

3.2.1 Implied liability for design under English law ....................................................... 25

3.2.2 The distinction of goods and systems ..................................................................... 32

3.2.3 Design life vs service life ....................................................................................... 33

3.3 Workmanship .............................................................................................................. 36

3.4 Materials’ fitness for purpose .................................................................................... 38

3.5 Explicit fitness for purpose warranty provisions under contracts ............................... 39

3.6 Concluding remarks ................................................................................................... 41

4 Limitations of fit for purpose obligations under common law ........................................ 43

4.1 Interpretation of the duty of care together with the fit for purpose obligation ............. 43

4.2 Contractual scope and the intended purpose of deliverables ....................................... 44

4.2.1 Identified purpose of works and services ............................................................... 44

4.2.2 Other limitations by the contractual scope of obligations .................................... 46

4.3 Non-reliance on the skills of the contractor ................................................................ 47

4.4 Contractual exclusion of warranties ........................................................................... 50

4.5 Concluding remarks ................................................................................................... 52

5 Construction of the fitness for purpose concept under Danish law ............................... 53

5.1 Liability standards under Danish construction law ..................................................... 53
5.1.1 Liability basis with regard to materials ............................................................... 53
5.1.2 Liability basis with regard to design................................................................. 56
5.2 Fitness for purpose as a warranty under Danish construction law .................. 57
5.3 Adoption of meaning in light of English law ....................................................... 63
6 Conclusion and perspectives ............................................................................. 66
Bibliography ........................................................................................................... 69
List of abbreviations

Common law jurisdictions:

A.C. Appeal Cases (United Kingdom)
Con LR Construction Law Reports
CSIH Scottish Court of Session, Inner House
EWHC High Court of England and Wales
HL House of Lords
Lloyd’s Rep. Lloyd’s Law Reports
NSWSC New South Wales Supreme Court (Australia)
SC Court of Session Cases (Scotland)
SCR Supreme Court Reports (Canada)
TCC Technology and Construction Court (England and Wales)
UKSC United Kingdom Supreme Court
W.L.R Weekly Law Reports (England and Wales)

Denmark:

AB 18 General conditions for building and construction works and supplies 2018
ABT 18 General conditions for design and build contracts 2018
ABR 18 General conditions for consultancy services for building and construction works 2018
KFE Decisions on Real Estate (Kendelser om Fast Ejendom)
TBB Journal of Building and Construction Court (Tidsskrift for Bolig- og Byggeret)
Ufr or U. The Danish weekly law report (Ugeskrift for Retsvæsen)

Other:

FIDIC International Federation of Consulting Engineers
SMA Service and maintenance agreement
EPC Engineering, procurement and construction
1 Introduction

1.1 Background

The construction industry plays a significant role in the EU economy by contributing to its GDP by approximately 9%. A high number of construction projects naturally entails frequent occurrence of disputes among involved stakeholders due to, among other numerous issues, contractors’ poor performance, non-payment by an employer or failures related to innovative technologies used. According to one of the recent reports on engineering insurance claims, the supply of defective products and faulty workmanship became the leading reasons for claims.\(^1\) Therefore, the quality of the delivered works is of paramount importance for the parties.

There is no universally accepted and absolute definition of a defect, which is always to be determined based on analysis of contractual terms, project-specific requirements and applicable law. The defect is generally should be understood as a shortcoming in the goods, design and other works and services in light of what should have been delivered.\(^2\) Furthermore, to determine whether the obligations of the contractor have been fulfilled or the works contain defects, it is essential to understand the agreed scope of works and liability standards. In particular, the question that may arise in relation to any failures in the works is whether the contractor’s fault is an essential element for him to incur liability.

In common law jurisdictions, contractors may sometimes be held liable (according to the applicable law or the contract) just based on the fact that the completed works did not achieve their intended purpose: such concept is called a “fitness for purpose” duty. For example, suppose the contractor is obliged to build a house with a waterproof roof. In that case, a failure to achieve such a result may make the contractor liable regardless of the level of diligence applied. This strict obligation is often criticised, and, for instance, the Build UK (construction industry representative organization) advises not to include such fitness for purpose standard of care in agreements.\(^3\) Not realistic expectations, insurance unavailability, high costs and cautious, conservative design solutions are named as some of the reasons for such a decision.\(^4\)


\(^4\) ibid.
In order to understand such problems arising in construction projects in relation to the performance standard of a contractor, the scope of his fitness for purpose obligation towards an employer\(^5\) is analysed in the current thesis.

1.2 Research question and delimitation

This thesis aims to answer the following question: “What are the content and limitations of the contractor’s fitness for purpose obligation in the construction projects?”

Since a fitness for purpose warranty is a common law concept, this research question is answered by analysing mainly English law. The standard contract forms originated in common law jurisdictions, and, inspired by them, bespoke contracts have become widespread in international construction projects\(^6\) globally; thus, it is also interesting to see how such common law concept could be interpreted in civil law jurisdictions. Therefore, the liability basis of contractors and interpretation of fitness for purpose provisions under Danish law are shortly examined.

The terms “warranty”, “obligation”, “duty” and “guarantee” of fitness for purpose\(^7\) are used as synonyms in this work. Prior to understanding the content of the warranty in question, it is essential, as a starting point, to determine the implied liability standards of contractors under English law – concerning used materials, supplied design, workmanship and completed works as a whole. Such an overview demonstrates when the fitness for purpose warranty becomes relevant. Following that, the nature of fitness for purpose duty and its interpretation in the context of other obligations is examined, particularly in relation to the obligation to comply with the employer’s requirements. Moreover, some concrete examples of goods’ purpose are reviewed concerning design, such as a lifetime of delivered works. Finally, the actual content of the warranty would not be understood entirely without considerations of its limitations – in light of applicable law and contractual provisions. The limitation should be understood broadly, including the complete exclusion of such a warranty from the application.

\(^5\) A party that commissions the works (and finally owns it) is named in this thesis as an “employer”, a “developer”, a “client” or an “owner”. Another party, which is carrying out the works, is named as a “contractor”, a “supplier” or, in certain circumstances, a “consultant” or a “designer”.

\(^6\) For the purposes of this thesis, construction projects should be understood as a broad category, including traditional building and/or design works, engineering projects containing only a small part of a building scope, various supply and installation projects.

\(^7\) It is more common to use the term “warranty” rather than “guarantee” in relation to fitness for purpose concept in construction law. Even though it could be discussed that originally the terms are not equal, for the purposes of the current research, they should be understood as having the same meaning – “the assurance by the contractor to the employer that the works supplied are suitable and will conform to the intended purpose”.

7
In addition to understanding the legal framework of fitness for purpose warranty, contract standards often used in international construction projects are analysed. The focus is made on FIDIC\textsuperscript{8} international standard forms of contracts.

Since the fitness for purpose warranty is not a part of the Danish law system, this thesis attempts to investigate how it could be construed under Danish law. The liability basis of the contractors under Danish construction law is briefly reviewed in relation to materials and design.

This study focuses on analysing the contractual liability of contractors while liability for defects under tort law is out of the research’s scope. The product liability issues have also not been analysed as a part of this study. Furthermore, the employer’s remedies as a result of fitness for purpose warranty’s breach or any other defects in the works are not covered by this thesis. The contractor’s responsibility in consumer contracts may differ from commercial construction agreements, though this work’s focus is made on a business relationship.

1.3 Methodology and sources

The thesis is written in principle by using the traditional legal dogmatic method.\textsuperscript{9} Such a method has been selected for the analysis to describe and interpret applicable contract and construction law (statutory law and case law) as they are in order to answer the research question. Furthermore, authoritative sources, including non-binding precedents and scholarly works, are also used.

The research is done within national legal order (the law of England and Wales and the law of Denmark), though some international instruments of soft law – the UNIDROIT Principles of International Commercial Contracts\textsuperscript{10} – are briefly discussed.

With regard to English law\textsuperscript{11}, the main statutory texts to be analysed are the Sale of Goods Act\textsuperscript{12} and the Supply of Goods and Services Act\textsuperscript{13}, the provisions of which directly or by analogy apply to the contracts for works and services (generally to be defined as construction contracts). If such statutes establish only the framework regarding a fitness for purpose warranty, English case law contains more detailed rules and interpretations of such concept, which are essential for answering the research

\textsuperscript{8} International Federation of Consulting Engineers.
\textsuperscript{9} Mark Van Hoecke, \textit{Methodologies of Legal Research} (Hart Publishing 2011) 11.
\textsuperscript{10} The UNIDROIT Principles of International Commercial Contracts 2016, International Institute for the Unification of Private law.
\textsuperscript{11} The United Kingdom legal system comprises of three jurisdictions, one of which is the law of England and Wales. Such self-contained legal system, being a focus of this thesis, will be referred to as English law. The references to “common law” or “the law of the United Kingdom” are made for convenience and should be understood as the law of England and Wales.
\textsuperscript{13} Supply of Goods and Services Act 1982.
question. The United Kingdom courts often cite the rulings of other common law jurisdictions’ judicial institutes (for instance, Australia or Canada), which are also reviewed, if relevant. The central authoritative sources of English scholarly works are the Keating on Construction Contracts\(^\text{14}\) and Hudson’s Building and Engineering Contracts.\(^\text{15}\)

The contract drafting method of English lawyers became widespread in international construction projects worldwide, which is also contributed by the common law inspired standard contract forms. Therefore, Danish law has been chosen as an example of the civil law systems in order to explore whether there is such a notion as a *fitness for purpose warranty* (or similar) and how this common law concept could be interpreted under Danish construction law. A functional method of comparative legal research is used during such study, where the issues regarding the fitness for purpose warranty and contractor’s liability basis related to it are analysed, independent from the jurisdictions’ general legal frameworks.\(^\text{16}\) It is worth clarifying that the priority in the overall research is given to English law, while Danish law is examined to a lesser extent and only for establishing how the English law concept in question is construed. For this reason, this thesis should not be considered as a conventional and pure comparative study. While an analysis of other than English and Danish jurisdictions is not intended, some sporadic remarks are made to other civil law or common law legal systems for having a brief insight into the problem.

Under Danish law, there is no statute regulating the relationship of the parties under construction contracts\(^\text{17}\), though the general contract law applies, and a case law related to construction law disputes plays an important role. The recent edition of commonly applied contract standards in Denmark are general conditions for building and construction works and supplies 2018 (“AB 18”)\(^\text{18}\), general conditions for design and build contracts 2018 (“ABT 18”)\(^\text{19}\) and general conditions for consultancy services for building and construction works 2018 (“ABR 18”).\(^\text{20}\) Such AB contract forms are considered to be the agreed standards within the industry – by representatives of different interest groups (including contractors and employers).\(^\text{21}\) Furthermore, it is often that their provisions

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\(^{17}\) Danish public law statutes are not examined, as being not relevant for the research question.

\(^{18}\) AB 18 is mainly used for build contracts, though some design obligations can also be agreed.

\(^{19}\) ABT 18 is used for design and build scope and sometimes referred to as “turnkey contract”. This thesis will not focus on analyzing different procurement forms in construction projects, and the references to turnkey or EPC contracts should be understood as concerning the design-build scope.

\(^{20}\) ABR 18 is used for consultancy agreements, for example, with engineers, designers or architects.

reflect the codification of actual relevant case law, which would apply to a contractual relationship even if the AB contract would not be adopted by parties.\textsuperscript{22} According to such AB standards, the disputes should be finally resolved by the Danish Building and Construction Arbitration Board, the published decisions of which are analysed.

Finally, the regulation of a fitness for purpose obligation under FIDIC conditions of contract of 2017 edition are studied since such standards are currently one of the most prominent in international construction projects; in particular, the Conditions for Construction ("FIDIC Red Book")\textsuperscript{23}, the Conditions Contract for Plant and Design Build ("FIDIC Yellow book")\textsuperscript{24} and the Conditions of Contract for EPC/Turnkey Projects ("FIDIC Silver Book")\textsuperscript{25}. In order to gain insight into the current trends in the construction industry (specifically wind farm construction\textsuperscript{26}), the approach towards fitness for purpose provisions in bespoke contracts are also referred to; however, no empirical study is intended with that regard.

\textbf{1.4 Structure}

The second chapter will investigate the contractor’s general performance standards in common law and civil law jurisdictions that aim to assist in determining the place of a fitness for purpose warranty therein.

The third chapter focuses on the content of a fit for purpose warranty under English law. The concept itself and its particular application with regard to a certain scope of works and services are analysed.

The fourth chapter is dedicated to examining the limitation of fitness for purpose warranty and its exclusion by the circumstances or the parties’ will.

The fifth chapter discusses the liability basis of contractors in construction projects under Danish law. Different possibilities of interpreting a fitness for purpose warranty within such a legal system will be investigated.

The study is concluded in the sixth chapter.

\textsuperscript{22} ibid 48.
\textsuperscript{24} FIDIC Plant and Design-Build Contract 2nd Ed (2017 Yellow Book) ("FIDIC Red Book 2017").
\textsuperscript{25} FIDIC Conditions of Contract for EPC Turnkey Project 2nd Ed (2017 Silver Book) ("FIDIC Silver Book 2017").
\textsuperscript{26} This study of bespoke contracts is limited by focusing on the wind farm construction sector, as being new and rapidly developing, where the issues of contractor’s liability for the performance quality are of the essence, especially when new technologies are often used.
2 A general overview of performance standards

Across jurisdictions, there are different performance standards' classifications, one of which is to categorise it depending on whether a party should be at fault to be held liable (culpa element) or the fact of a specific act or lack thereof is sufficient. Accordingly, the liability could be a) strict, where there is no necessity to prove fault, or b) imposed only as a result of a certain level of negligence being proven. Such classification of liability and other categories with regard to performance standards are shortly reviewed in the chapters below in order to understand the characteristics of a fitness for purpose obligation.

2.1 Common law approach

Two central legal liabilities (or otherwise called “degrees of care”) can be distinguished in common law construction contracts depending on the necessity of a fault element (intention or negligence) in establishing it. The determination of a particular applicable standard to an obligation should be done by examining statutory, case law and the parties’ agreement.

Firstly, in performing its obligations, a contractor may be responsible for achieving a particular result (purpose) – for example, to complete the building, which is suitable for inhabitation in certain environmental conditions, being it an absolute obligation. If this standard applies, a failure to achieve a certain purpose will be a breach of contract despite the absence of the contractor’s fault. Such performance standard is called a “fitness for purpose” duty which implies a strict obligation to achieve the result. The content and limitations of such duty are analysed in details in chapters 3 and 4 of the thesis.

Secondly, a contractor may have only a duty of care (in tort or contract), according to which a contractor will be in breach to the extent its fault in carrying out obligations is established. The necessity for the employer to prove fault for the contractor to incur liability constitutes the main distinguishing factor for the duty of care, which also substantially affects the costs in dispute resolution proceedings. Another important feature of this standard of care is reasonableness and not a full

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30 Helm and others (n 28) 40.
31 It is possible for a contractor to owe a duty of reasonable care concurrently in tort and in contract, if it has been agreed by the parties. The scope and enforceability of such duties may but not necessarily do coincide, as, for example, conditions for establishing a breach of the duty may vary. It is often that the contractual framework of such duty would limit the scope of a tortious duty. See Bailey (n 2) 949–952. Anyway, an analysis of tort law is beyond the scope of this thesis.
32 Bunni, FIDIC Forms Contract (n 29) 202.
elimination of risks. There are different standards of duty of care, the actual content of which is determined taking into account facts and agreement implications, though with regard to construction, it is often relevant to discuss a reasonable skill and care obligation.

A duty to exercise reasonable skill and care impliedly applies to contractors who are obliged to perform works under a contract. The standard of an owed duty is largely dependent on the expertise and qualifications of such party. Therefore, if a party has been employed to carry out certain works or perform services as a professional person (for example, an architect or a designer), he is required to do so as would be done by an ordinary representative of that profession exercising reasonable skills and care and having the required qualifications. Therefore, in this case, a party will not be liable for not achieving the result provided that it has exercised reasonable skill and care according to the standards of its profession predominant at the time of the claimed breach of obligations. The benchmark of conduct is something considered acceptable and within the limits of a reasonable professional judgement. However, the standard of an ordinary competent man should not be justified if such a person actually possesses higher skills or acquired certain knowledge normally not available to ordinary professionals, which he ought to apply with care. Similarly, innovation is also encouraged in construction so that a failure with regard to novel concepts and work methods about which the professional did not have profound knowledge and experience may not be a breach of duty of care. Also, it is always important to consider the agreed contractual terms of appointment, which may either decrease or increase the standard of care which would otherwise ordinarily be expected. For instance, a contractor’s contractual obligation to prepare a design that would fit a particular purpose would require compliance with such provisions even if it requires more than ordinary professional care. If both duties (on suitability and reasonable skill and care) are included in the contract, the strict obligation will usually prevail. However, the interface of these two performance standards is not always very clear and straightforward and is further discussed in chapter 4.1.

Lastly, other standards may apply to the performance of construction professionals, contractors, which may be more onerous than a duty of reasonable skill and care but not necessarily absolute obligations, depending on the wording of their appointment and any other implied terms. For

33 Bailey (n 2) 857.
34 Ibid 207.
36 Ibid 892.
37 Ibid 891.
38 Dennys, Clay and Atkin Chambers (n 15) 245.
39 Ibid 246.
40 Bailey (n 2) 891.
41 Dennys, Clay and Atkin Chambers (n 15) 390.
42 Ibid 250.
example, a standard regarding an obligation to provide the goods of the first-class quality or a duty of loyalty imposed on a professional who acts as a fiduciary for the employer.43

2.2 Civil law approach

2.2.1 Obligation to achieve results or the obligation to make the best efforts

In civil law jurisdictions, it is common to classify contractual obligations into obligations to achieve a result (obligation de resultat) and obligations to use appropriate means or best efforts (obligation de moyens) in order to achieve a result, which has initially been proposed by a French scholar Demogue.44 Such distinction, in theory, is used to determine the nature of undertaken obligation and the determination if obligations have been discharged. For the latter obligation, the focus is made on performing the required acts by employing due efforts and in a good and reasonable manner, regardless of actual achievement of any objective result,45 which makes it a less onerous obligation.

In Denmark, scholars also refer to this division of obligations to explain different types of responsibility allocation for breach of contract.46

In addition to such obligations’ classification being introduced in many civil law jurisdictions’ jurisprudence or legislation47, it has also been adopted by the UNIDROIT in the Principles on International Commercial Contracts 2016 (“UNIDROIT Principles”). Under art. 5.1.4(1)48, a party is obliged to achieve the result if the obligation involves such duty. If an obligation includes “the duty of best efforts in the performance of an activity”, then such efforts should be made as can be expected from “a reasonable person of the same kind in the same circumstances”.49 The commentary to art.

43 D Alessi, ‘The Distinction between Obligations de Resultat and Obligations de Moyens and the Enforceability of Promises’ (2005) 13 European Review of Private Law 659. The purpose, correctness and practical implications of such twofold system of obligations are not discussed in this thesis.

44 ibid 661.


47 For example, Brazil, Germany, Spain, ibid. Also North Europe, Belgium, Luxembourg, the Netherlands, Italy, Poland, Romania, Latin America, Lebanon, Quebec, Alessi (n 44) 662.


49 5.1.4(2). Article 5.1.5 of the UNIDROIT Principles sets out a non-exhaustive list of four factors to be taken into account when determining which exactly type of duty is included in the obligation. Firstly, it refers to how a particular obligation is “expressed in the contract”. For example, it is stated that a provision establishing a certain deadline for completing the works infers that there should be a result of meeting such date. Secondly, it is necessary to look at other terms under contract, including the price. The commentary suggests that an unusually high contractual price or payments on the successful completion, outcome may indicate on the stricter duty to achieve a specific result assumed. Thirdly, high risks associated with the carrying out an obligation would not lead to the duty to achieve a result. Finally, when the performance of an obligation is under the influence of another party, it may indicate on the duty to use best efforts. It is difficult to fully agree with all such listed criteria (even if non-exhaustive), since neither the price nor the risk level of obligation should play a crucial role in determining the nature of obligation, though a deep analysis of these UNIDROIT provisions is out of scope of this research.
5.1.4 of the UNIDROIT Principles rightfully points out that such two duties may both be relevant for some contractual obligations – for example, repair works should be done by using the best efforts in terms of work quality and may at the same time include the result as a replacement of some parts.\textsuperscript{50} Therefore, it is always required to analyse the nature of obligations to understand the degree of diligence to be employed and to assess whether the obligations have been carried out. Each contract, particularly in the construction industry, contain multiple obligations, which may or may not imply a duty to achieve the result. Furthermore, even if the contractor is obliged to carry out the construction works (to obtain certain result) while performing its obligations, due care should be continuously taken and skills applied (namely, the efforts to be made).\textsuperscript{51} As has been concluded by Hansen\textsuperscript{52}, it may not be practical or theoretically correct to categorise the contractor’s obligation as a whole under construction contracts as an obligation to achieve the result or use best efforts. Each separate responsibility should be analysed individually, considering other provisions of the contract, facts of the project and applicable law.

Some studies suggest that such a split of obligations is similar to the common law’s division of fitness for purpose and reasonable skill and care concepts.\textsuperscript{53} Even though it is not possible to agree with the statement that these categorizations of obligations in two different systems are identical, they carry some similar ideas in their reasoning – an understanding of when the obligation is discharged. This statement does not in any way intend to claim that obligation to achieve the result will imply a warranty of fitness for purpose but is merely used to demonstrate one of the theories behind strict contractual obligations in civil law. The obligation of supplying the design may be considered to be a duty to deliver a result (for example, buildable design); however, the liability basis may still be the one based on fault.

2.2.2 Fitness for purpose concept in civil law jurisdictions

Generally, the concept of carrying out the works being fit for purpose is not completely unknown in civil law jurisdictions – for instance, in France, the Netherlands, Greece, Luxembourg\textsuperscript{54}, Germany\textsuperscript{55}. For example, in accordance with art. 1792 of the French Civil Code, the contractor is liable for defects in works making the structure not suitable for its purposes (“impropriété à destination”).\textsuperscript{56} The

\textsuperscript{50} UNIDROIT Principles on International Commercial Contracts 2016 156.
\textsuperscript{53} Helm and others (n 17) 42-43.
\textsuperscript{54} Klee (n 95) 648; Joseph A Huse, Understanding and Negotiating Turnkey and EPC Contracts (3rd edn, Sweet & Maxwell 2013) 151.
\textsuperscript{55} Helm and others (n 28) 50.
\textsuperscript{56} ibid 43; Christopher Seppala, ‘Letter to the Editors’ [2000] The International Construction Law Review 207.
purpose is often considered as of the works as a whole, though it is at the wide discretion of judges to assess the concept by taking into account the provisions of the agreed contract.57 The liability for such defects is strict, and only extraneous causes may be relied on to avoid responsibility.58 It should be interpreted together with decennial liability, according to which a constructor is liable to an employer for ten years for any damage jeopardizing the structural unity or make the structure not suitable for its intended purpose.59 For a contractor to be held liable, only the damage shall be proven without the necessity to establish any fault.60 Under the German Civil Code, not defective works are works of an agreed quality. Unless the quality has been otherwise agreed by the parties, the works are free from defects in case they are “suitable for the use envisaged in the contract” or else “suitable for the customary use”, 61 which at first glance makes it resembling the regime under English law.62 These provisions apply to contracts for works, which also cover the design and build agreements.63

These referred rules of French and German law only demonstrate that there are similar concepts of strict liability regarding the delivered works; however, the actual content of such duties may be drastically different and need to be analysed in further details in order to make comparison with the common law warranty of fitness for purpose, which is beyond the scope of this thesis. It must be remembered that the fitness for purpose warranty in common law is just a certain framework of liability characterised as strict, often prevailing over other obligations (such as compliance with employer’s requirements), but the actual content of which is always to be determined based on the circumstances of the project, agreed purpose of works and precise contractual wording. Under Danish contract law, the liability basis may also vary from strict to fault bases of the debtor when acted not diligently. The precise liability basis of contractors in construction projects under Danish law and the interpretation approach of the common law concept of fitness for purpose warranties will be analysed in chapter 5.

57 Helm and others (n 28) 45.
58 ibid 43–44.
59 Nael G Bunni, ‘The Four Criteria of Risk Allocation in Construction Contracts’ [2009] International Construction Law Review 192. The jurisdictions where such decennial liability is contained in applicable law are out of this thesis’ scope. The example is given merely for demonstrating that the governing law may impose additional liability to that provided for in contracts.
60 Helm and others (n 28) 44.
62 Helm and others (n 28) 51.
3 What is the content of a fit for purpose obligation under English law?

Chapter 3.1 below analyses what a fitness for purpose obligation under English law means and what the elements of such a concept are. Under the following chapters, it will be determined in relation to what scope of the contract the fitness for purpose warranty is implied under applicable law or can be expressly provided. The required quality of the contractor’s deliverables is commonly set out and assessed within the following categories: design, workmanship, materials and the whole works.64 Thus, after determining the nature of fitness for purpose warranty, its application is discussed with regard to such above-mentioned scope categories.

3.1 A fitness for purpose concept under English law

3.1.1 The nature and construction of the fitness for purpose duty

As has already been mentioned in chapter 2, the characteristic feature of a fit for purpose warranty is that it is a strict, absolute obligation to achieve a certain result when performing the works or services. It means that the contractor will usually be liable for not achieving the result notwithstanding the reasons behind it, its own intentions or matters beyond the contractor’s control, subject to the contractual provisions stating otherwise65 or other limitations under applicable law (which are considered in chapter 4). The absence of any negligence66 in carrying out the works or services cannot be a defence for the failure.

Prior to considering particular obligations to which fitness for purpose liability standard applies, it is important to determine how such standard should be incorporated into the contract. Is it required for it to be explicitly set out? In relation to some of the contractor’s obligations, such a strict warranty will be just implied under applicable statutory law. Under the Sale of Goods Act, section 14 sets out that the supplied goods should be (i) of a satisfactory quality, which includes “fitness for all the purposes for which goods of the kind in question are commonly supplied”67, and (ii) reasonably fit for any other purpose made known by the employer (buyer) implicitly or explicitly unless it is evident that there is a reliance by the employer on the contractor’s skill or judgement. Even if construction agreements are for work and materials and not for the sale of goods, common law adopts implied terms in relation to material and fitness for purpose warranty from sales law into construction law.68 Analogous provision on an implied fitness for purpose obligation with regard to the transferred goods is included in the

64 Dennys, Clay and Atkin Chambers (n 15) 388.
66 References to terms “negligence” and “negligent” in this thesis should be understood broadly as a general concept of fault, including both negligence and intent.
68 Dennys, Clay and Atkin Chambers (n 15) 389.
Supply of Goods and Services Act 1982, which covers the contracts for the transfer of goods (including construction contracts).\(^{69}\)

It can be inferred that the contractor’s warranty can be constructed in three ways: (a) by implication of a fitness for a purpose for which the goods are ordinarily sourced, (b) by implication of a fitness for a specific not common purpose which has been communicated by the employer, (c) by an explicit agreement that certain services or works will be fit for purpose. The express contractual provisions would particularly be required when certain works should otherwise be carried out only in accordance with reasonable skill and care. It should be noted that there is no requirement to use the terms “warranty” or “guarantee” for such a warranty to be construed.\(^{70}\) Similarly, including a term that the works should be fit for their purpose may not increase certainty if the purpose itself is unclear.

The content of a fitness for purpose warranty naturally depends upon the purpose of the delivery. First of all, the ordinary purpose of the goods in question is one of the satisfactory quality criteria. Secondly, it is necessary to understand whether the employer made it known to the contractor what is the purpose of, for example, ordered goods. In case such a particular purpose has been communicated in contract or otherwise, there may be an implied obligation of the contractor to supply goods that are reasonably fit for such purpose.\(^{71}\) It will always be a question of facts in proving that the purchaser of such goods actually intended these goods to be used for a particular purpose.\(^{72}\) The precise meaning of the purpose should be understood via an analysis of the contractual provisions, where the scope of works is defined, usually being the technical specifications. Under English law, the contractor would be obliged to carry out its obligations in strict compliance with such specifications establishing performance criteria.\(^{73}\) For example, if the scope of works is the construction of an energy plant, its purpose may be understood through a defined amount of power to be generated in a given period, waste production or pollution rates.\(^{74}\) If the employer specifies that a wind farm should have an average annual capacity of 500 MW, the contractor has an obligation of installing as many wind turbines as necessary to satisfy such criterion, e.g. by taking into account maintenance and wind conditions.\(^{75}\) Provisions that the completed works should be waterproof would also indicate a certain

\(^{69}\) Supply of Goods and Services Act 1982, s.4 on implied terms about quality or fitness.


\(^{71}\) Bailey (n 2) 202.

\(^{72}\) ibid.

\(^{73}\) Helm and others (n 28) 40.

\(^{74}\) ibid.

\(^{75}\) Jaeger and Hök (n 63) 213.
purpose so that the contractor should take all necessary steps to ensure the result, such as additional coating, even if it is not stated in the requirements.  

If the purpose of the goods is formulated with reference to their lifetime (for example, service life), the issue may arise with regard to identification whether such goods are fit for such purpose when there are defects, but it is not clear how it would affect the agreed service lifetime in future. Recently, such a question has been considered in Fluor v Shanghai Zhenhua Heavy Industries concerning the dispute on the quality of monopiles and transition pieces (used as foundations) of an offshore windfarm supplied by ZPMC to the Fluor (the balance of plant contractor). During the ultrasonic testing of the delivered monopoles, some welding defects have been identified, and the repairs have been made by Fluor. Later, Fluor claimed damages by arguing that the goods were not fit for purposes at the delivery and did not comply with the following requirements: the goods had to be (1) in condition to be installed without any investigations and repairs, and (2) “suitable for installation...and thereafter to perform in service satisfactorily for 25 years”. ZPMC disagreed with such an effect of a fitness for purpose warranty and argued that there should be an objective test to identify whether the monopiles and transition pieces could serve as foundations for 25 years, regardless of Fluor’s opinion. Since in the current case it was not possible to establish whether the goods were fit for purpose (namely, could have a 25-years’ lifetime) without lengthy investigations, the fact that the discovered cracks prevented Fluor as a reasonable buyer to load the goods onto a vessel and install in the seabed without additional testing illustrated a (deemed) breach of fitness for purpose obligation.

Considering the issues that have arisen in this case, it may be reasonable in some circumstances to agree on the methods of identification when the goods actually do not fit their purpose.

In addition to the agreed or established purpose, all other contractual provisions setting out the contractor’s obligations would also affect how far-reaching a fitness for purpose duty is. For instance, the agreement may require the contractor to bear all risks in relation to underground soil conditions and errors in technical specifications or, vice versa, allocate such risks to the employer.

Sometimes it is submitted that the contract price is taken into account to determine a necessary level of quality of performed works. The Supply of Goods and Services Act also points out that the standard

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76 Ibid 214.
77 Fluor Ltd v Shanghai Zhenhua Heavy Industries Ltd [2016] EWHC 2062 (TCC).
78 Balance of plant of a wind farm is generally considered as everything besides the wind turbine generators, though the precise scope differs from project to project.
79 Fluor Ltd v Shanghai Zhenhua Heavy Industries Ltd (n 77) at [523], [527].
80 Ibid at [528].
81 Ibid at [529] - [534].
82 Contractual limitations of the fitness for purpose duty will be considered in chapter 4 of this thesis.
of satisfactory quality should be assessed, taking into account relevant circumstances, including the price. For example, the obviously low price may allow for some tolerance towards the delivered works when assessing it on the subject of defects. However, it is suggested that in deciding what standard should apply to the performance (for example, a strict liability basis), the price alone is irrelevant.

3.1.2 Fitness for purpose duty and obligation to comply with employer’s requirements

Under construction contracts, a contractor has a wide range of different obligations, such as compliance with the employer’s requirements, industry standards, certain methods of performance. The question arises whether a failure to deliver the works that fit its purpose would be a breach of the contractor’s obligations in case other obligations are complied with. Particularly, it could become an issue if such other obligations contained erroneous requirements, which caused or contributed to such failure. Would its compliance with the specifications regarding the works, as required under the contract, relieve the contractor from liability due to such works being not fit for their purpose?

The appeal case in the UK Supreme Court MT Højgaard A/S (Respondent, “MTH”) v E.ON Climate & Renewables UK Robin Rigg East Limited and another (Appellants, “E.ON”) (“Robin Rigg case”) considered such issue in 2017. Under a design and build contract, MTH was obliged to design and install monopile foundations for an offshore wind farm, which started failing within a short period of time after completion – transition pieces connecting the wind turbine tower and monopile started sliding down due to problems in grouted connection. Under the technical requirements, MTH had to prepare the design according to the international standard JN101 issued by the certification agency DNV concerning the design of offshore wind turbine structures, which had been complied with. Shortly after the installation has been completed, DNV announced that the J101 standard contained a mistake with regard to some calculations, which caused the transition pieces to fail not only in this project but in some other projects as well. The conditions of the contract set out that the works “shall be free from defective workmanship and materials and fit for its purpose as determined in accordance with the Specification using Good Industry Practice”. The “Specification” was interpreted as meaning the “Employer’s Requirements”, which included the technical requirements. Under para 3.2.2.2 of section

83 Supply of Goods and Services Act 1982, s. 4(2A).
84 Bailey (n 2) 1282.
85 Furst and Ramsey (n 14) 78. However, indirect relationship of the price and a fitness for purpose warranty could be shown, when the price is one of the procurement forms’ indicators. For example, a lump-sum price model is used in the engineering, procurement and construct (EPC) projects, where the works generally should be delivered that fit for purpose. See more in Klee (n 54) 172–173.
87 Ibid at [22-23]
88 Ibid at [17]
“Detailed Design Stage” in such technical requirements, the contractor was supposed to prepare the design so that “the design of the foundations shall ensure a lifetime\(^{89}\) of 20 year in every aspect without planned replacement”, and the contractor should decide on structure and materials in accordance with such requirement.\(^{90}\) The references to a lifetime (or to service, design life) of 20 years have been included a few times. Key functional requirements, also contained in the technical requirements, stated that the works need to be designed for a “minimum site specific ‘design life’ of twenty (20) years without major retrofits or refurbishments”.\(^{91}\) Moreover, it was explicitly provided that the section of technical requirements referring to a 20-years lifetime only sets out the minimum requirements of E.ON, and it is the responsibility of MTH to determine any areas where additional, stricter parameters should be laid down in the design, even if it demands any departures from standards.\(^{92}\) One of the main issues to consider by the Supreme Court was the enforceability of the above-mentioned para. 3.2.2.2(ii) under the technical requirements, which included a provision regarding a lifetime of 20 years, and its consistency with the obligation to make the design in accordance with J101 standard (para. 3.2.2.2(i)).

The court found that there is no inconsistency between these two obligations – to supply the works a) according to a specific design and b) satisfying the performance criterion. It is often that provisions of the contract may be construed in a way that the design requirements should be improved in order to deliver the works fulfilling the performance criterion, or such design may be considered as incomplete in relation to performance element.\(^{93}\) Furthermore, the employer’s requirement explicitly included that the contractor should improve the specifications if necessary, though even without such provisions, the conclusion of the court would not be different in the current case.\(^{94}\) The court noted that the law on this issue had been demonstrated in *Cammell Laird and Co Ltd v The Manganese Bronze and Brass Co Ltd\(^{95}\)*: an obligation of a builder to achieve a finished result may still be necessary to fulfil, even if it is difficult or impossible to do so based on required specifications or plans.

To support its conclusions, a number of cases have additionally been considered by the court in the Robin Rigg case, some of which are shortly reviewed below.

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89 The meaning of a term “lifetime” under such provision is discussed in chapter 3.2 below.
90 MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86) at [6].
91 Ibid at [4].
92 Ibid at [5, 47].
93 Ibid at [37, 44-47].
94 Ibid at [47].
95 Ibid at [43].
The English case of *Thorn v The Mayor and Commonalty of London*96 ("Thorn case") concerned the replacement of a bridge in accordance with the employer’s specifications, under which iron caissons were supposed to form the foundations. Later, it turned out that the provided design of caissons was incorrect as the works would not suit their purpose, which lead the contractor to incur costs and delay the project. The contractor argued that the employer had implicitly provided a warranty that its specifications could be used for building the bridge. Lord Chelmsford, in rejecting the variation claim, concluded that the contractor should have informed itself of “*all the particulars connected with the work, and especially as to the practicability of executing every part of the work contained in the specification, according to the specified terms and conditions*”97 in order for the employer to warrant the accuracy of provided information, clear and explicit wording should be included in the contract.

In *The Hydraulic Engineering Co Ltd v Spencer and Sons* (1886),98 the contractor had been engaged in order to supply cast iron cylinders, which should be cast in accordance with specifications and capable of withstanding a certain pressure, the latter of which could not be achieved. The statement of the defendant that they cannot be held liable since a failure to achieve the performance criteria was inevitable as a result of adherence to the provided plan was rejected by the court as it is still a defect.

The guarantee to construct the buildings that are weather tight and by using non-defective materials and workmanship was held to prevail over the obligation to comply with the employer’s requirements by the Supreme Court of Canada in *The Steel Company of Canada Ltd v Willand Management Ltd*.99 The reference to workmanship and materials being “*first class and without defect*” indicated the purpose of works. The court referred to the principle set out in the 8th edition of Hudson’s Building and Engineering Contracts concerning the interpretation of fit for purpose obligation, taking into account employer’s technical specification100:

“generally the express obligation to construct a work capable of carrying out the duty in question overrides the obligation to comply with the plans and specifications, and the contractor will be liable for the failure of the work notwithstanding that it is carried out

97 Alexander Thorn v The Mayor and Commonalty of London (1876) 1 App Cas 120 132.
98 The Hydraulic Engineering Co Ltd v Spencer and Sons (1886) 2 TLR 554, only in MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86) at [39].
99 The Steel Company of Canada Ltd v Willand Management Ltd [1966] SCR 746, in MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86) at [41].
100 ibid.
in accordance with the plans and specification. Nor will he be entitled to extra payment for amending the work so that it will perform the stipulated duty.”

In another Canadian case of Greater Vancouver Water District v North American Pipe & Steel Ltd, the contractor warranted and guaranteed that any part of the supplied water pipes would be free from defects occurring due to faulty design. At the same time, the warranty has been given that such goods would comply with specifications (which turned out to contain defects) and be fit for purpose. The Court of Appeal stated that these are two effective individual obligations even if a conflict thereof may arise. Since the warranty concerning the absence of defects in supplied goods does not specify whose design causes the defects, it should be construed that the given warranty covers all defects.101

Therefore, it can be concluded from the English and Canadian authorities cited above that the obligations to comply with employer’s requirements and to deliver the works fit for purpose do not contradict each other and should be construed in such a way that compliance with technical specifications is subject to the works achieving a certain result,102 of course, always subject to the construction of contractual provisions.

US Spearin Doctrine

It is interesting to compare the English law position with the approach applied in construction cases in the majority of states of the USA, the so-called “Spearin” doctrine.103 In United States v Spearin104 (“Spearin case”), Spearin had to construct a dry dock, including sewer’s relocation, in accordance with the employer’s design specification and plans. Such government’s specifications set out the sewer’s precise new location, the dimensions, and the materials to be used. After completion of works, the sewerage system failed due to the unexpected existence of a dam in the system not shown in plans, high tide and rains. Even though the court admitted that it is the contractor’s responsibility to familiarise itself with the site since the risk for unforeseen difficulties with regard to subsoil conditions is at the contractor, the allocation of risks has changed due to the implied warranty given by the employer. The US Supreme Court stated that the inclusion of the obligation to comply with requirements set out “the character, dimensions and location of the sewer imported a warranty that if the specifications were complied with, the sewer would be adequate”. Moreover, a general

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102 Bailey (n 96) 131.
103 Dymond and others (n 101) 18.
104 United States v Spearin 248 US 132; 54 Ct.Cl 187; 39 S.Ct 59; 63 L.Ed 166 (1918), in ibid (n 101) 17.
responsibility of a contractor to examine the site does not impose an obligation to diligently search for the history of the site and review whether the provided plans prove adequate.\textsuperscript{105}

To compare Spearin with the English Thorn case, the House of Lords did not hesitate in deciding that Thorn is liable for the losses that occurred due to defects in specifications provided by the employer. These cases demonstrate a difference between the UK and the US positions in the analysis of contractors’ liability with regard to failures caused by any omissions or mistakes in the employer’s requirements. However, it should be noted that such implied warranty in the US does not extend to situations when only the intended result is specified without any details on how such criteria to be achieved. For example, in the US case Rhone v Newman, the contractor installed the opaque spandrel glass, which started to delaminate even prior to completion. While the contractor had to comply with the employer’s specifications, he also warranted that the works would be free from defects by including a contractual obligation to replace any defective materials. The court concluded that such express duty to rectify all defects prevails over an implied warranty concerning the correctness of employer’s documents or other general obligations to review plans or visit the site.\textsuperscript{106} Taking into account a legal position formulated in this case, it was correctly suggested that the Robin Rigg case (also concerning explicit warranties) would unlikely achieve any different outcome under the US law, of course, if the warranties were interpreted as specific enough.\textsuperscript{107}

Therefore, it is useful to determine the scope and type of specifications (particularly when the US law is applied) – containing the design or performance criteria – in order to decide whether any warranty by an employer is implied, though such distinction may be blurred and not absolute.\textsuperscript{108} Usually, the employer’s requirements do not provide separately for the design and performance specifications, which are interrelated and often included together in relation to the certain scope of works. Thus, it will be an issue of determination by the court what level of discretion the contractor had and whether the losses resulting from the faulty design requirements. If the English approach regime seems harsher compared to the US, it certainly brings more certainty to the risk allocation.\textsuperscript{109}

\subsection*{3.1.3 State of the art defence}

It may be appealing for contractors to use the “state of the art” defence in case the delivered design, materials or any other parts of works fail, which could not be predicted at the time of performance due to lack of knowledge in the industry or unproven technologies. For the purposes of this research,

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{105} ibid 18.
\item \textsuperscript{106} ibid 25.
\item \textsuperscript{107} ibid.
\item \textsuperscript{108} ibid 21.
\item \textsuperscript{109} ibid 26.
\end{itemize}
\end{footnotesize}
the “state of the art” should be defined not as the most updated scientific knowledge available to academicians but as “the art and science that would be applied by competent and experienced practitioners involved in the relevant practice of civil engineering”\(^{110}\). What should stakeholders in construction projects use as a reference point to state of the art? All industries usually develop the standards for a particular type of works, which should be followed by practitioners. Since the representative of the industry and highly experienced engineers (or other professionals) are working together on creating such standards, they are considered to constitute the “state of the art” for practitioners in a given area.\(^{111}\) However, standards are more of a baseline, which also develops within the technological progress, and can be amended in projects provided that it is a reliable, rational and justifiable engineering solution.\(^{112}\)

If the list of standards to be followed is prepared by engineers on the employer’s behalf, it is important that they choose the applicable standard with due diligence and do not list a number of standards from different jurisdictions on the same issue with the intention that the contractor will follow the stringent requirements based on all such standards to achieve the best results. It could be both confusing for the contractor and unreasonable, taking into account the particularities of the project and applicable law.\(^{113}\)

If the professional fails in the performance of his obligations — for example, he delivered a novel design that later proved to be inadequate — there will not necessarily be a breach of a duty of care established unless the designer was negligent. Such negligence may be determined if a professional possessed the required skill and was in abundance of experience for that specific project or obligations. Nevertheless, a novelty cannot be referred to for avoiding the liability if the explicit or implicit warranty has been given that the implemented design would perform as agreed.\(^{114}\) For example, the Robin Rigg case\(^{115}\) is a good demonstration of the contractor being held liable for the works not being fit for purpose even if they have been carried out in compliance with the standards considered “state of the art” at the time of contract signing.\(^{116}\) Such strict responsibility for certain errors and omissions which would not be detected by competent practitioners within the industry is one of the main reasons for criticism of fitness for purpose warranty in common law jurisdictions. The potential counterargument, though,


\(^{111}\) ibid 19.

\(^{112}\) ibid.

\(^{113}\) ibid 20.

\(^{114}\) Bailey (n 2) 892.

\(^{115}\) MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86).

could be that it is not obvious exactly which party should assure such risk; therefore, the risk allocation can be freely negotiated.\textsuperscript{117}

It has, though, been submitted that the obligations to follow (i) employer’s requirements or to comply with (ii) industry standards may not have the same weight when interpreted together with a fitness for purpose duty.\textsuperscript{118} In particular, the fact that the standards are usually developed by many highly skilled industry representatives could be a contributing factor for concluding that the employer relies on such standards more than its own technical specifications, which are drafted in-house or by external advisors. If in the Robin Rigg case the court concluded that the employer actually relied on the contractor’s skill and judgement rather than only on the DNV standard (as it was even expressly identified to be only minimum requirements), the degree of reliance on analogous standards could be different (higher) in other projects based on all facts and circumstances, which could potentially be one of the pointers to the overall employer’s reliance (or lack thereof) on the contractor’s skill and judgement\textsuperscript{119}. Nonetheless, the contractor cannot, as a general rule, refer to compliance with the “state of the art” standards to avoid liability for breach of a fitness for purpose warranty.

3.2 Design’s fitness for purpose

3.2.1 Implied liability for design under English law

3.2.1.1 General liability standard with regard to design

The scope of design obligations of the contractor may vary on the spectrum from (i) deciding the methods to be applied in executing the works or the choice of materials used to (ii) having the responsibility for the whole design of a building or structure.\textsuperscript{120} The design relates to the part of the scope where the choice of contractor is required.\textsuperscript{121} The former limited design responsibilities under para (i) usually occur when the employer has separately engaged a professional to provide the design, while the contractor would be obliged to comply with it in construction and only to decide the materials or other issues not covered by design (in so-called build only contracts).

In English law, there may be a difference in the applicable design liability standard depending on the scope of services or works awarded under the contract. If the contract contains obligations of the contractor to carry out only the design of a whole or a part of the works, it is implied under English

\textsuperscript{117} Huse (n 54) 150.
\textsuperscript{118} Dennys, Clay and Atkin Chambers (n 15) 408.
\textsuperscript{119} The employer’s lack of reliance on the contractor’s abilities will be discussed in details in chapter 4.
\textsuperscript{120} A Constable, \textit{Keating on Offshore Construction and Marine Engineering Contracts} (2nd editio, Sweet & Maxwell/Thomson Reuters 2018) 3.
\textsuperscript{121} Dennys, Clay and Atkin Chambers (n 15) 269.
law that a contractor should perform the services with reasonable care and skill.\textsuperscript{122} Such professionals carrying out the design obligations – architects, designers or engineers - shall be skilled and qualified in their area. This performance standard is also usually explicitly included in the agreements. Provisions stating that a contractor should provide services of “\textit{first class quality}” was though concluded to impose a more strengthened standard than ordinary reasonable skill and care.\textsuperscript{123} However, the parties are always free to agree in the contract that the supplied design should be fit for purpose. In addition, the designer may impliedly have an absolute obligation of fitness for purpose only in special circumstances\textsuperscript{124}, as described below. It is interesting to analyse the \textit{Greaves v Beynham Meikle} (“\textit{Greaves case}”), where the engineers (employed as designers in the project) were held to be liable for the design as not being suitable for its purpose.\textsuperscript{125} Greaves & Co (the “contractor”) hired Beynham Meikle & Partners (the “designer”) to only design a warehouse so that the floor could withstand a load of oil drums loaded onto trucks. After a few months from completion, cracks appeared on the first floor, which made the main contractor liable to its client for damages. The contractor sued the designer claiming that it breached both a fitness for purpose warranty and a duty of reasonable skill and care. Even if commonly the professionals do not warrant that the completed works would achieve a result (as a doctor does not promise to cure the patient), the Court of Appeal found that there was actually an implied in \textit{facts} warranty that the work build pursuant to the defendant’s design would be fit for bearing a load of trucks with oil drums.\textsuperscript{126} The reason for such outcome is that it has been evidently demonstrated (also by the designer’s admission in the pleadings, though later withdrawn) that the precise purpose of the warehouse was communicated to the designer. It is submitted that the Greaves case does not lay down any general rules on professionals’ liability but make a conclusion based on special circumstances.\textsuperscript{127} Curiously, another conclusion has been reached in \textit{George Hawkins v Chrysler (1986)}, where the floors selected by the engineers for showers turned out to be too slippery and, hence, not suitable for wet and soapy conditions leading to the injury of a workman.\textsuperscript{128} Even if the cross-examination showed the awareness of the engineers to choose the safe floors, the arguments of the Greaves case were disregarded on the basis that, in the Greaves case, the designer admitted its liability in the pleadings, which ground does not seem very

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\textsuperscript{122} Supply of Goods and Services Act 1982, s. 13. Please see chapter 2.1 regarding more details on a reasonable skill and care standard. The detailed analysis of such standard of care is though beyond the scope of this research.

\textsuperscript{123} Furst and Ramsey (n 13) 432; Dennys, Clay and Atkin Chambers (n 15) 250.

\textsuperscript{124} Furst and Ramsey (n 14) 449.

\textsuperscript{125} Greaves & Co. (Contractors) Ltd. v Baynham Meikle & Partners [1975] 1 W.L.R. 1095.

\textsuperscript{126} ibid.

\textsuperscript{127} Furst and Ramsey (n 14) 450.

\textsuperscript{128} Dennys, Clay and Atkin Chambers (n 15) 272.
\end{flushright}
persuasive. Nevertheless, attempts to impose absolute liability on a designer, such as in the case of an implied fitness for purpose warranty, always entails that there should be particular factual circumstances or an explicit contractual wording.

3.2.1.2 A fitness for purpose duty in design and build contracts

If the employer engages a contractor who should not only design but also build the works (under design and build contract), it is more certain that the implied obligation will be different under English law since the employer will place higher reliance on the contractor, and the contractor will be considered not just as a designer or a builder but as a supplier of goods, and as having a single point of responsibility. In particular, it is common that in the engineering procure and construct ("EPC") or turnkey projects, where it is the contractor’s responsibility to realise the whole project (for example, construction of manufacturing or energy plant), the fitness for purpose warranty is assumed for the materials and the final result – completed building functioning as agreed. In that case, the provisions on the implied duty of fitness for purpose for provided goods may apply, as set out in the Sales of Goods Act and the Supply of Goods and Services Act. It is, of course, not an absolute rule that the contractor would owe a fitness for purpose duty in relation to design in design and build contracts – exemplarily, there is also a possibility of limiting the performance standard to the duty of care, what is further analysed in chapter 4. Though if the agreement is silent on the nature of the obligation, it is more likely that it will be more onerous (a duty of fitness for purpose) by implication. If the contractor owes an overarching duty of fitness for purpose, the review or approval of the design by the employer will not affect the contractor’s liability if some errors are left unnoticed. If the design was carried only with due care responsibility, the issue of contributory negligence could arise in such a situation.

The reasoning behind a more stringent approach to the design provided by a design and build contractor could be that the seller of goods has an aim to remain competitive in the market by, sometimes, downgrading the design quality to a minimum standard as can be acceptable. Therefore, an unqualified obligation of the goods’ suitability combats this conflict of interest. A professional designer, on the contrary, does not have incentives to provide a lower quality design but even often

129 ibid.
131 Dennys, Clay and Atkin Chambers (n 15) 414.
132 Bailey (n 96) 128.
133 Dennys, Clay and Atkin Chambers (n 15) 413.
134 Klee (n 54) 173.
135 Dennys, Clay and Atkin Chambers (n 15) 421.
136 ibid 426. However, the issues of negligence law and liability in tort are beyond the scope of this research.
takes the conservative approach of “over-designing”. The court in Viking Grain Storage v T. H. White Installations ("Viking Grain Storage case") concluded that the design and build agreement is a single contract; therefore, there should not be different levels of warranties for different obligations. For the warranty to be implied, it is important that special circumstances are established: the intention of parties and reliance.

In Independent Broadcasting Authority v EMI Electronics and BICC Construction ("IBA case"), EMI (the main contractor) undertook to erect a television mast pursuant to the design of BICC (the nominated subcontractor for design and construction works). A few years after completion of works, the mast collapsed due to vortex shedding aggravated by asymmetrical ice on the stays, which was a well-known phenomenon to BICC. Based on the main contract, EMI has accepted the responsibility for design (and became liable for such negligent design), even if it did not participate in its preparation. Since it was concluded that the negligence in preparing the design was established, the House of Lords did not have to decide the extent of responsibility for design (only fault-based or a strict liability basis) by EMI to IBA and by BICC to EMI. However, Lord Scarman pointed out that “in the absence of a clear, contractual indication to the contrary, I see no reason why one who in the course of his business contracts to design, supply, and erect a television aerial mast is not under an obligation to ensure that it is reasonably fit for the purpose which he knows it is intended to be used”. He further stated, as an objection to the appellants, that the design obligation of a professional designer should be the same as that of a supplier of the goods. Therefore, provided that the contract does not stipulate that the contractor should exercise reasonable skill and care while delivering the design, it may be considered that the contractor’s works should be fit for their purpose. In such a case, the contractor would not be able to rely on its performance of design in compliance with reasonable skill and care standard. The construction of these two performance standards is further analysed in chapter 4.1 below with regard to limitations of a fitness for purpose duty.

138 Dennys, Clay and Atkin Chambers (n 15) 273.
140 Charrett, The Application of Contracts in Engineering and Construction Projects (n 116) 95.
142 Vortex shedding is a natural phenomenon occurring due to specific water or air flows, which may cause surface to vibrate. See the definition here: https://www.collinsdictionary.com/dictionary/english/vortex-shedding (accessed on 19 May 2021).
143 Independent Broadcasting Authority v EMI Electronics Ltd and BICC Construction Ltd (n 141), 10-18.
144 Charrett, ‘Design Life or Service Life: What Is the Difference?’ (n 110) 33. The referred case is Independent Broadcasting Authority v EMI Electronics Ltd and BICC Construction Ltd (n 141), 10-36. However, the critical issue of fact is whether the employer actually relied upon the main contractor’s and nominated subcontractor’s skills to supply the structure that is fit for purpose.
145 Independent Broadcasting Authority v EMI Electronics Ltd and BICC Construction Ltd (n 141), 10-37.
146 Bailey (n 96) 128.
Such inference of a fitness for purpose duty with respect to the whole build and design contracts has been criticised.\textsuperscript{147} Some scholars accept that it is convenient to have one liability standard in relation to the agreement but consider that there is no concrete reason for it being fitness for purpose rather than a negligence-based standard.\textsuperscript{148} Others just suggest not to imply a fitness for purpose warranty for the works as a whole under design and build agreements.\textsuperscript{149} It is proposed that it is unreasonable for contractors both designing and building the works to have a higher standard of liability rather than professionals providing only the design; therefore, an express reasonable skill and care standard for the design should be included\textsuperscript{150}, which is often stipulated in the contract. If an EPC/turnkey contractor subcontracts the design, which will be done on the basis of a reasonable skill and care standard, the contractor would not be able to pass the employer’s claim to such subcontractor.\textsuperscript{151} On the other hand, the value of the contract price for design and build agreements is much higher than for consultancy agreements with professionals; hence the capacity for taking risks regarding strict liability is also bigger.\textsuperscript{152}

The main reason why the industry standard limits the designer’s responsibility to reasonable skill and care is that it is extremely difficult to obtain professional liability insurance coverage for a duty to deliver a design fitting the particular purpose.\textsuperscript{153} The lack of insurance does not just impose financial risks on the contractor as a responsible party but also creates a counterparty risk for the employer, including the replacement of such contractor in case of bankruptcy events. Thus, shifting away from the implied fitness for purpose warranty in the contracts in question would solve not just the issue of insurability but also facilitate a “state of the art” design and would not “treat” the design responsibilities differently depending on procurement set-up.\textsuperscript{154} The approaches of the insurance market, employers and contractors are yet to be aligned for determining the future trends in relation to an assumption of the fitness for purpose obligation.\textsuperscript{155}

\textsuperscript{147} Huse (n 54) 149.
\textsuperscript{148} Bardel and Minogue (n 139) 17. In particular, the author refers to Hazel Flemming’s article “Fitness for Purpose: the implied design obligation in construction contracts” (1997).
\textsuperscript{149} ibid 17–18.
\textsuperscript{150} Bailey (n 96) 128.
\textsuperscript{152} Klee (n 54) 549.
\textsuperscript{153} Glover (n 35) 49; Huse (n 54) 149.
\textsuperscript{154} Bardel and Minogue (n 139) 18.
\textsuperscript{155} Klee (n 54) 549. However, it is controversial whether such alignment is necessary and feasible, as all projects have their own circumstances and stakeholders have different interests.
If the fitness for purpose duty is explicitly or implicitly included in the main contract, the design obligations may be further subcontracted to consultants and often on a back-to-back basis. If the warranty is expressly and sufficiently provided for, then the designer may have a strict obligation to carry out the design works that suit the agreed employer’s purpose, though it will not automatically lead to the implication of fitness to the main contractor’s purpose in tender preparation. In the tender stage, the contractor’s purpose could be a preliminary design, the construction costs of which would be achievable by a diligent contractor when priced with a certain precision. However, it is unlikely that the designer would agree to be strictly liable for the final construction costs, especially when the insurance for such liability is not available.

3.2.1.3 Fitness for purpose duty in build only contracts

As has been concluded in chapter 3.2.1.2, fitness for purpose warranty may be implied in relation to the whole works in case the contractor has undertaken both design and building obligations. Will such warranty be implied for the finished works under a pure build contract when a contractor constructs the works strictly based on provided design? In this case, applicable law does not usually require that such a building will be fit for its purpose, and this warranty would only concern the materials supplied or used for construction. It may be reasonable for the term on erected structure’s fitness for purpose to be implied in construction contracts, “but that will only be so if and insofar as the structure is to be designed by the contractor”.

However, one of the important elements for imposing a strict fitness for purpose warranty is the employer’s reliance upon the skills of the contractor, which in some cases can also be established in build contracts. As, for instance, it is not rare that the employers consult with the main contractor prior to making the design for its inclusion in the contractor’s documents. It is also to be noted that even if a contractor undertakes the responsibility to carry out construction or installation works based on the design supplied by an employer, there still may be space left for some design obligations of such contractor, namely the choice of materials used. One of the compelling examples is Cammel Laird v Manganese, Bronze & Brass Ltd case of 1934, where the contractor had to manufacture the

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156 Back-to-back subcontracting implies that the subcontract is entered on substantially the same terms as of the main contract, with adjustments due to the scope difference. There is no unified approach and drafting technique for achieving a back-to-back subcontract, which will vary from project to project.
157 Charrett, The Application of Contracts in Engineering and Construction Projects (n 116) 93.
158 ibid 97.
159 Klee (n 54) 647.
160 Tesco Stores Ltd. v Costain Construction Ltd & Ors [2003] EWHC 1487 (TCC) at [180].
161 Please see more on the employer’s reliance in chapter 4.3.
162 Dennys, Clay and Atkin Chambers (n 15) 396.
163 Glover (n 65) 47.
propellers for ships in compliance with the drawings of the shipbuilder (with minimal design choices left to the contractor), that in the end turned out to produce too high level of noise making ships unsuitable for receiving a specific classification. The House of Lords concluded that the supplier knew for which ship the products were required and that the shipbuilder relied on the skills and expertise in finishing the propellers.\textsuperscript{165}

If it is clear that the employer relies on the contractor (for example, no designer is currently engaged), the liability may also be imposed on a build contractor carrying out the works based on design initially prepared by the employer’s architects in case such design turns out to be obviously defective and the defect is so apparent that the contractor had to warn the employer with that regard (though such facts do not necessarily imply a fitness for purpose obligation).\textsuperscript{166}

FIDIC Red Book, which is generally intended only for construction works, sets out in Sub-Clause 4.1(e) that in case the design obligations are also undertaken concerning certain part of works, that part of works when completed, shall be fit for purpose (as defined under the contract or, if not included, for ordinary purpose).\textsuperscript{167} For instance, the value engineering proposal by the contractor\textsuperscript{168} that comprises potential changes to the design will also be subject to such fitness for purpose obligation if implemented\textsuperscript{169} what makes the contractor discouraged even to consider such proposals. A potential argument regarding such fit for purpose provisions in FIDIC Red Book is whether the contractor’s design part is that essential for the project that it would amount to the duty of the whole works being fit for purpose.\textsuperscript{170} Since the purpose is generally limited to the contractual wording and to only a specific part to be designed, the employer shall take into consideration when defining purpose if the contractor’s failed design would undermine the whole project’s success, what should be explicitly specified.\textsuperscript{171}

Accordingly, a contractor under a build only contract may have an implied fitness for purpose warranty to the extent it has certain design obligations.

\textsuperscript{165} ibid.
\textsuperscript{166} ibid 404.
\textsuperscript{167} FIDIC Red Book 2017.
\textsuperscript{168} Under Sub-Clause 13.2 of the FIDIC Red Book, a value engineering proposal may be submitted by an initiative and at the cost of the contractor, which may accelerate completion of the works or otherwise benefit the employer.
\textsuperscript{170} Dennys, Clay and Atkin Chambers (n 15) 423.
\textsuperscript{171} ibid.
3.2.2 The distinction of goods and systems

As has been discussed in the previous chapters, the qualification of the agreement and contractor’s obligations is necessary for determining whether the provisions on goods in, for example, the UK Supply of Goods and Services Act or the Sales of Goods Act apply, which may imply the duty of providing the goods that are fit for purpose – common for the goods or specifically agreed on purpose. Though such acts usually apply to construction contracts, the term “goods” should be interpreted in light of the contracts and applicable law. Does the notion of good in the meaning of the Sales of Goods Act cover the whole structure and its design or just materials supplied?

The issue of distinction of goods from systems has been discussed in Trebor Bassett Holdings & The Cadbury UK (together as “Cadbury”) v ADT Fire and Security Plc (“ADT”) ("Cadbury case"). ADT was hired by Cadbury (which was using some parts of Trebor Bassett’s factory) to design, supply, install and commission a system for fire suppression for one of the areas in a popcorn production factory. It was supposed to extinguish the fire by discharging carbon dioxide if a fire had been detected by sensors. Unfortunately, a fire that started from overheated kernels was not put out by the system as could be expected and, as a consequence, it spread and destroyed the whole manufacturing unit since the area of an oil pop production part was not segregated from other parts of the factory. In the judgement of the High Court of Justice TCC, Justice Coulson concluded that ADT’s main obligation was to design the system specifically to extinguish the fire by CO2 in the hopper, taking into account its size, amount of popcorn and a probability of a deep-seated fire therein. Therefore, by applying the Supply of Goods and Services Act 1982, ADT owed a duty of reasonable care and skill to Cadbury while performing out the services. The court found that ADT failed to design the fire suppression system using reasonable care and skill, but its liability to Trebor Bassett and Cadbury was reduced to 75% due to the negligence of Cadbury itself to install sprinkle mechanisms and separate the oil pop production lines from the rest of the building.

Cadbury appealed on the grounds that, among others, the contract should have been characterised as the one under which the goods should have also been supplied so that the contractor owed the duties to transfer the goods of satisfactory quality and fit for purpose, both of which were breached. Such argument that the fire suppression system constituted a product (good) was rejected in the Court of Appeal. Lord Justice Tomlinson argued that the character of an obligation to supply goods would be delivering a standard or an “off-shelf” product or a kit based on certain capabilities; while the

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172 Glover (n 65) 46.
174 ibid at [36-37].
175 ibid at [11-12].
176 ibid at [41].
design obligation required ADT to provide a bespoke solution tailored to a specific location, performance criteria, to select the constituent parts in a manner that suit the agreed environment and protect from the risks.\textsuperscript{177} Thus the primary obligation of the contractor was to supply the design skills rather than goods. Furthermore, a cause of the system fails to suppress the fire was in its design, even if individual parts of the system were of good quality.

It has been discussed why the position that in case the contractor is responsible for both the design and supply the completed works as a whole should be fit for purpose was not adopted in the Cadbury case.\textsuperscript{178} Without contesting the deemed lack of established purpose in the contract with ADT, it is noteworthy to see how the fire suppression system was decided not to constitute the “goods” in the meaning of applicable law. Can it be considered that the fire suppression system is more bespoke than the television aerial mast as in the IBA case, a new vessel type, a warehouse designed for bearing the specific loads or an electricity system for a specific building? It is doubtful that the fact that the designed and supplied building, equipment or any other work is bespoke and not an “off-the-shelf” product would necessarily indicate that such items cannot be interpreted as “goods.

From the perspective of the Cadbury case, it is recommended to explicitly specify that systems, equipment and not just goods should be fit for purpose in order to avoid any ambiguities.\textsuperscript{179} Obviously, the precise purposes of each such deliverables should be set out to make the warranty effective.

\subsection{Design life vs service life}

It is natural that a designer in performing its obligations should follow a number of design parameters\textsuperscript{180} specific for the building or structure, such as work functionality, environmental conditions and client’s preferences, which will be described in the tender documents, client’s order or in the contract. Furthermore, sometimes contractual documents, often technical specification, may set out that the design should have a certain design life of a certain period.\textsuperscript{181} Such design life should be interpreted as a specific purpose of the design to be achieved, which may lead to the fitness for purpose warranty to be implied as generally being an overriding standard of performance.

There is no unified definition of “design life”, though such term is often understood as being a period during which the product would not demand any major reparation works. In \textit{Baulderstone Hornibrook Engineering v Gordian Runoff} (“Baulderstone case”), Einstein J provided that the design life could mean \textit{“the period of time during which a structure or structural element, when designed, is assumed

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\textsuperscript{177} ibid at [43-44].
\textsuperscript{178} Bardel and Minogue (n 139).
\textsuperscript{179} ibid 19.
\textsuperscript{180} Charrett, ‘Design Life or Service Life: What Is the Difference?’ (n 110) 17.
\textsuperscript{181} Bailey (n 96) 127.
\end{flushleft}
to perform for its intended purpose with expected maintenance, but without major repair being necessary”, or “the period over which a structure or structural element is required to perform its function without repair”.\textsuperscript{182} Additionally, he stated that such a term refers to probabilistic predictions rather than actual performance.\textsuperscript{183} The difference with the actual life period could be due to parameters that sometimes cannot be assessed in full details while preparing the design, including the properties of materials, environment, potential loads on the structure.\textsuperscript{184}

The design life should be distinguished from the service life, which is a period of the actual functional operation of the structure.\textsuperscript{185} However, the service life which is required by the developers of projects (not actual service life achieved) may coincide with the design life, and both terms are usually laid into the design criteria.\textsuperscript{186} Charrett defined the design life as “expected service life that results from the design process”. For example, the J101 standard on the design of offshore wind turbine structures explicitly set out with regard to fatigue limit state that the structure’s design life should be based on specified service life.\textsuperscript{187} The relevant case law should be reviewed to clarify these terms further.

Under \textit{125 OBS (Nominees1) & Anor v Lend Lease Construction (Europe) Ltd & Anor}\textsuperscript{188}, 125 OBS employed LLC & Anor to carry out the redevelopment of the building, including its cladding with a curtain walling system of glass panes. After completion, there were 21 episodes of glass breakage due to nickel sulphide inclusion in the glass. In order to reduce the risk of such breakage (as experts evidenced, to 0-5 occurrences), the contractor had to heat soak the glass in compliance with a specific European standard. The contractor was obliged to provide all goods and materials, such as curtain walling glass: 1) of good quality (heat soaked accordingly), 2) fit for purpose (with a service life of 30 years and a design life of at least 30 years, with exceptions for some parts of works), 3) reasonably satisfactory to the employer and 4) in compliance with the proposal of the contractor and other specifications.\textsuperscript{189} It was found by the court that all these obligations were consistent.\textsuperscript{190} The court concluded that as a result of glass heat soaking not in accordance with the contract, the glass as

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\textsuperscript{182} Baulderstone Hornibrook Engineering Pty Limited v Gordian Runoff Limited (formerly GIO Insurance Limited) & Ors [2006] NSWSC 223 at [1079(iii)].
\textsuperscript{183} ibid at [1079(v)].
\textsuperscript{184} Charrett, ‘Design Life or Service Life: What Is the Difference?’ (n 110) 18.
\textsuperscript{185} ibid 28.
\textsuperscript{186} ibid 29.
\textsuperscript{188} \textit{125 OBS (Nominees1) & Anor v Lend Lease Construction (Europe) Ltd & Anor} [2017] EWHC 25 (TCC), 174 Con LR 105, [2017] TCLR 8.
\textsuperscript{189} ibid at [105-106].
\textsuperscript{190} ibid at [111].
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installed could not achieve 30 years’ design and service life.\textsuperscript{191} At the same time, it was noted that the design life requirement was met by design itself; however, such requirement was not satisfied by the produced and installed work. Moreover, it has been stated that if the heat soaking of glass had been carried out in compliance with the contract, the failure rate would have been consistent with the design life. In answering the disputed issue of whether the completed works (glass) fit for their purposes, it was referred to the contractual purpose of providing the exterior building cover with a 30-years’ service life, which had been breached.\textsuperscript{192} It seems that references to design and service life have not been used consistently. In particular, it is not very clear why it has been decided that the units have not complied with design life obligation, while concluded that the design of glass met necessary design criteria. Perhaps, the explanation of what exactly has been breached (design or service life) was not clear enough. It could be suggested that in the particular case, the contractual breach was of a service life requirement rather than the intended design life of the product.

The conversation whether the contractor has warranted a design life or a service life under the wind turbine foundation design and build contract has arisen in the Robin Rigg case\textsuperscript{193} (the details of which are described in chapter 3.1.2 above). In particular, this obligation was not very clear due to the wording of para. 3.2.2.2 in the technical requirements stating that the “design of the foundations shall ensure a lifetime of 20 years...”\textsuperscript{194} without any explicit reference to a design or service life. The employer’s requirements several times referred either to design life or service life (rarer) in other provisions.

In the Court of Appeal (overruled by the Supreme Court in 2017), Jackson LJ stated that even if such provision requiring to provide design ensuring a certain lifetime (para. 3.2.2.2 of the TR) seems that it implies a warranty that the works will actually function for such period, other clauses under technical requirements referred to a term “design life”. Therefore, he concluded that: “if a structure has a design life of 20 years, that does not mean that inevitably it will function for 20 years, although it probably will”.\textsuperscript{195} He also concluded that MTH had an obligation to rectify only those defects which were claimed within 24 months after handing over.

Lord Neuberger, in the Supreme Court judgement, though, gave an opinion that such para. 3.2.2.2 provides for a warranty that the foundations were to be designed to last for 20 years (design life); therefore, when read together with the defect notification period clauses, the E.ON had 24 months to

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\item \textsuperscript{191} ibid at [137].
\item \textsuperscript{192} ibid at [138]
\item \textsuperscript{193} MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86).
\item \textsuperscript{194} ibid at [6].
\item \textsuperscript{195} ibid at [51]; Charrett, ‘Design Life or Service Life: What Is the Difference?’ (n 110) 32.
\end{itemize}
discover that the design was not in compliance with the warranty rather than that the foundations actually failed (in case of service life). However, it is further stated in the judgement that there is no necessity to make a decision whether a 20-years’ lifetime should be interpreted as referring to design or to service life. Firstly, it is controversial whether the technical requirements should be interpreted via the conditions of the contract since such requirements have been prepared and agreed on prior to the contract signing. Secondly, discussed para. 3.2.2.2 being an effective contractual mechanism has been breached regardless of what meaning it is to be given, which demonstrates that the court considered that the works had neither achieved the required design life nor a service life.

The parties should always pay attention to what ‘lifetime’ – design or service – the delivered works should comply with. It is submitted that the contractor’s obligation to deliver the works that can achieve a certain service life may be more expensive for the employer. It has sometimes been seen that the supplier provides a warranty that the delivered design will have a certified design life of a certain period of years without guaranteeing that it will achieve an operational lifetime for the same period. Anyway, the provisions that aim at barring claims for defects after the expiry of the defects notification period may serve as limiting the value of lifetime warranties.

The standards usually specify the design/service life, which can be achieved if the conditions set out therein are satisfied. However, the project may request even longer design/service life, for which used materials and performance methods will have to be changed, if it is possible from the engineering point of view.

3.3 Workmanship

Workmanship refers to the manner in which the works are to be continuously executed. When the defect is detected in the works, one of the issues is to determine whether it has been caused by the failure in the design or it is a matter of workmanship, the line between which is a thin one. Firstly, it is necessary for understanding which party is liable for defects if the design and build obligations have been performed by different parties. Such a scenario is common in the projects where a multi-contracting procurement strategy is used (for example, in offshore wind farm construction), according to which the design, manufacturing and installation scopes may be awarded to different contractors.

196 MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86) at [30].
197 ibid at [32].
198 Charrett, The Application of Contracts in Engineering and Construction Projects (n 116) 84.
199 Clarke and Tweeddale (n 169) 498.
200 ibid.
202 Clarke and Tweeddale (n 169) 485.
Secondly, it may be a matter of insurances, the coverage under which is usually different for these two types of obligations.

As for the difference between design and workmanship, it has been suggested by Glover that a choice between two types of roofs is a question of design, while a selection of a nail or a screw for the performance of the works is an issue of workmanship.\textsuperscript{203} Additionally, the author refers to the statement that, as a rough guide, “the shape, dimensions, choice of material and other matters apparent from the drawings are generally regarded as design matters and the things left over for the good sense of the contractor are generally regarded as matters of workmanship”.\textsuperscript{204} It seems to be a very general and impractical explanation since many elements, such as the selected materials, methods, may not be reflected or apparent in the drawings but still be a design matter. The correct identification of certain scope being a design or workmanship will always be dependent on fact and contractual wording.\textsuperscript{205} The practical implication of the difference could be in the event the contract imposes different liability bases on design and workmanship obligations. It has also been pointed out that the workmanship obligation may involve some design choice responsibilities not dealt with under the contract documents, in relation to which the liability could be different.\textsuperscript{206} Though if workmanship comprise the design obligations as well, the practical implication of separating such concepts gets even more blurred. Nevertheless, such an issue is discussed in relation to the recent case below.

Unless stated otherwise, there is an implied obligation to perform the works “skillfully and carefully”, or otherwise often stipulated in contracts as “in a good and workmanlike manner”.\textsuperscript{207} It means that the contractor generally has to exercise reasonable skill and care when it concerns workmanship. An example of such obligations would be a contract under which the contractor only build/produce a product strictly with provided detailed plans and drawings, which would usually point out to the lack of the employer’s reliance on the contractor’s skill with regard to design.\textsuperscript{208} However, more complex projects may require the skills above any good practice, where the state of the art skills are necessary. In such an event, defining good workmanship is not very helpful.\textsuperscript{209} The contractor chooses the manner of performance at its discretion and, in practice, almost always bears responsibility for defects occurring as a result of poor workmanship.\textsuperscript{210}

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\textsuperscript{203} Glover (n 65) 47.  \\
\textsuperscript{204} ibid 48.  \\
\textsuperscript{205} Clarke and Tweeddale (n 169) 501.  \\
\textsuperscript{206} Dennys, Clay and Atkin Chambers (n 15) 394.  \\
\textsuperscript{207} ibid.  \\
\textsuperscript{208} ibid 396.  \\
\textsuperscript{209} ibid 394.  \\
\textsuperscript{210} Glover (n 65) 48.
\end{flushright}
Fitness for purpose duty refers to the completed works or its part, while the workmanship is rather related to the process of the building. However, not carrying out the works in a workmanlike manner may lead to the unsuitability of the result to its purpose. In *SSE Generation v Hochtief Solutions AG*, the question arose whether the tunnel collapsed due to a defect in construction or design. The contractor had to design and construct the hydro scheme that would have a purpose to perform without the necessity of any major repairs within a design life for civil works of 75 years, and that would be able to generate 100MW (thus, implying a fitness for purpose obligation). With regard to design defects, the contract included a limitation of liability clause so that the contractor should have only complied with reasonable skill and care standard. Rock erosion risk was an identified hazard, and the application of shotcrete where necessary was included as a mitigation measure under the accepted design. However, the collapse occurred as a result of inadequate use of shotcrete and rock bolts for erodible rock conditions, which could not provide the necessary tunnel support. By a majority of the Inner House, such defect has been decided to constitute not the design itself but the implementation of the design (put it otherwise, workmanship), when the engineering judgement on deciding what rocks were to be protected was needed.

This case demonstrates the importance of understanding the scope of a fitness for purpose warranty with regard to undertaken obligations; however, it does not seem very clear where the border between the design and its implementation (workmanship) is, what has also been pointed out by some practitioners.

The limitation of design obligations to a duty of care should not exclude the fitness for purpose duty imposed on materials and the works when the contractor’s workmanship had an influence on the achieved result.

**3.4 Materials’ fitness for purpose**

It is implied under English law that materials provided by the contractors should be reasonably fit for their purpose, including any particular purpose made known to the contractor. Most of the

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211 SSE Generation Ltd v Hochtief Solutions AG and another [2018] CSIH 26. The case is of Scottish Court of Session.
212 Ibid at [17-19].
214 Ibid at [340].
215 Ibid at [383].
217 Dennys, Clay and Atkin Chambers (n 15) 425.
218 Supply of Goods and Services Act 1982, s. 4(5).
contracts will contain a technical description of the materials to be used in construction, including their quality standards. Even if some details regarding qualities of materials are contained in the contractual documents, it would not automatically waive the contractor’s obligations of such materials being fit for purpose unless such duty is expressly excluded.\footnote{Bailey (n 96) 129.} For a reminder, there are concepts of fitness for purpose to be considered: 1) “for which goods of the kind in question are commonly supplied”, being one of the minimum aspects of satisfactory quality along with safety, durability and other elements,\footnote{Sale of Goods Act 1979, s. 14(2B).} and 2) for any particular purpose in the event it is made known to the contractor\footnote{Sale of Goods Act 1979, s. 14(3).} Even if the employer requires the use of materials of a certain brand, the implied warranty of materials’ satisfactory quality (including fitting for ordinary purpose) will not be excluded.\footnote{Dennys, Clay and Atkin Chambers (n 15) 391.} The fact of approval of a sub-supplier by the client does not discharge the main contractor from liability in the event the materials turn out to be not suitable.\footnote{ibid 392. Regarding Stewart v Reavell’s Garage [1952] 2 Q.B.} In Young & Marten v McManus Childs, the contractor instructed its roofing subcontractor to purchase tiles produced only by one manufacturer that turned out to be defective. Despite the fit for purpose warranty to be excluded, the contractor was held liable for the poor quality of such materials.\footnote{Furst and Ramsey (n 14) 73.}

There are circumstances, which may limit or exclude the contractor’s fitness for purpose warranty in relation to materials, which are analysed in chapter 4.

### 3.5 Explicit fitness for purpose warranty provisions under contracts

In order to avoid any uncertainty with regard to the implication of warranties concerning the works, the employer may want to set out such provisions in the contract explicitly. Examples of contractual provisions on fitness for purpose duty can be found under FIDIC standard contract forms which are often used in international construction projects. All FIDIC standard forms state in some way that the product delivered by the contractor should be fit for purpose, though the actual content of such obligation is not the same in all books, as the scope of the contractor drastically varies.\footnote{Ellis Baker and others, FIDIC Contracts: Law and Practice (5th edn., Informa Law from Routlege 2009) 98.} The analysis of such standard construction contract form is crucial, as these standards are commonly applied in international construction projects as well as used as a basis and inspiration for bespoke contracts in wind farm construction and other infrastructure projects. For instance, FIDIC Yellow standard form for plant and design-build contracts sets out that that the contractor shall carry out the works (or specified sections) that fit for the intended purpose(s). The purpose to be understood as defined and described...
under the “Employer’s Requirements” or, unless included, as ordinary purpose. Including a reference to the ordinary purpose (to be determined based on facts, evidence and law) when the purpose is not defined is considered to be an improvement of this new FIDIC 2017 edition. Notably, the employer using the FIDIC 2017 editions should be careful in defining the purpose in the employer’s requirements rather than anywhere else to avoid the application of such a fallback provision. By bringing to notice how the purpose should be included in the documents – “defined and described” – some scholars suggested to both specify and describe it in more details for the avoidance of any ambiguities. The rule that the purpose should be communicated clearly enough would in any way apply under English law, though such clarification of FIDIC wording is useful since this standard contract form is intended for use globally.

Under Sub-Clause 17.4 of FIDIC Yellow Book, the indemnity is provided by the contractor against errors, acts or omissions in performing the design obligations in such a way that leads the works (or its part) not being fit for purpose. Potential enormous financial consequences, which the contractor may encounter as a result of such indemnification, are limited due to (a) such indemnity being subject to the total liability cap and (b) indirect or consequential damages being carved out from its liability. Sub-Clause 19.2.3 of the FIDIC Yellow Book 2017 requires that professional indemnity insurance of the contractor should also cover any omissions in the design (if any) if it leads to the works not being fit for their purpose. It is often submitted that the contractor cannot obtain insurance for coverage of fitness for purpose obligation regarding design, though there are practitioners experiencing that there is such possibility in many civil law jurisdictions’ insurance markets.

It is important to note that the warranty of fitness for a particular purpose may often be located not just in the main conditions but in other contractual documents such as technical specifications, as FIDIC Yellow and Silver Books expressly require. The argument with this regard has been discussed in the Robin Rigg case (the facts of which are described in chapter 3.1.2 above), where the purpose of

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226 FIDIC Yellow Book 2017, Sub-Clause 4.1. Analogous provisions are also included in FIDIC Silver Book 2017 in Sub-Clause 4.1 and in FIDIC Red Book 2017 in Sub-Clause 4.1, but only with regard to any part that should be designed by the contractor.

227 William Godwin, The 2017 FIDIC Contracts (Wiley Blackwell 2020) 44. For comparison, the edition of 1999 did not refer to such a default ordinary purpose, however, it is likely that the courts would in any case interpret the obligation in such way if the purpose is not clearly included but a fitness for purpose warranty is given.

228 Furst and Ramsey (n 14) 1105.


230 FIDIC Yellow Book 2017, Sub-Clause 17.4. Analogous provisions are also included in FIDIC Silver Book 2017 in Sub-Clause 17.4, FIDIC Red Book 2017 in Sub-Clause 17.4.

231 FIDIC Yellow Book 2017, Sub-Clause 1.15.

232 Klee (n 54) 578.

233 MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another (n 86) at [48-53].
wind farm foundations (namely a lifetime of 20 years) was defined in the technical requirements, being part of the employer’s requirement. MTH argued that such a crucial obligation could not be inferred from the documentation of rather a technical nature and having a lower priority among contract documents, and which is also not drafted in a consistent way. The Court of Appeal agreed with MTH’s line of arguments and concluded that the provisions in the technical requirements containing a term concerning a 20-years’ lifetime “are too slender a thread upon which to hang a finding that MTH gave a warranty of 20 years’ life for the foundations”. The Supreme Court did not find such arguments correct - as the technical requirements in question were explicitly given the contractual effect, the meaning of works’ purpose was to be defined in the employer’s requirements, and bad contractual drafting does not justify derogation from fundamental contractual interpretation principles.

In bespoke contracts, it is recommended to define ‘fitness for purpose’ terms as broadly as possible, especially in the turnkey contracts, so that fitness of the works should be determined not just by fulfilling the purpose but all relevant specifications and employer’s requirements. Another way of allowing wide interpretation is to the purpose as in accordance with the agreement “or otherwise reasonably inferred” from it. It is, though, doubtful that such definitions would bring more clarity generally and with regard to different and maybe contradictory performance requirements. Making the purpose of works unclear can increase the risks of the completed works actually not fitting the specific purpose which was intended by the employer and depriving the project’s value.

Nevertheless, it is always an issue of contract construction whether the wording of purpose is drafted clearly. Otherwise, the contractor may argue that the duty is ineffective if the purpose has not been included explicitly enough.

3.6 Concluding remarks

A fitness for purpose warranty, if implied under law or agreed by the parties, imposes liability on the contractor in case of not performing warranted obligation despite the lack of its fault. Such strict duty’s content would always be dependent on the purpose of goods communicated to the contractor and other contractual obligations. It is notable that the warranty of the goods being fit for their purpose

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235 Duncan and Hudson (n 229) 164.
236 ibid 165.
238 Glover (n 65) 49.
would prevail over other obligations under the contract, such as compliance with the employer’s technical specifications or even industry standards comprising of state of the art knowledge.

Generally, a fitness for purpose warranty would be implied under English law with regard to materials supplied. The liability standard with regard to design, though, differs depending on the contract scope agreed. Professional designers usually should exercise only reasonable skill and care, but a design and build contractor should deliver the works, including design, that fit the agreed purpose (for instance, certain design or service life). When the liability for design is limited to reasonable skill and care, it is important to determine whether the defect has occurred in design or workmanship, in supplied goods or the designed systems to understand the applicable liability standard.
4 Limitations of fit for purpose obligations under common law

In addition to common excuses for contractor’s non-performance, such as frustration, there are different ways in which the fitness for purpose warranty may be limited or fully excluded, which will be discussed in this chapter.

4.1 Interpretation of the duty of care together with the fit for purpose obligation

Following the discussions on the Robin Rigg case, some scholars were of the opinion that it is unlikely that the reasonable skill and care duty could be ever used as a defence in case of failure to perform absolute obligations under the contract.\(^\text{239}\) Even if such concerns are sensible, fitness for purpose warranty can still be limited or fully overridden if such contractor’s duty is explicitly or implicitly subject to other obligations, for example, a duty to exercise reasonable skill and care.\(^\text{240}\) Thus, this chapter will analyse the interrelation of such two performance standards in more detail.

In *Mw High Tech Projects UK Ltd v Haase Environmental Consulting GmbH* (“*Mw High Tech case*”)\(^\text{241}\), MW (claimant, the EPC contractor) contracted the design of the waste energy plant out to HEC (defendant, the consultant). The contract incorporated the basic design proposal (including the EPC delivery plan) previously completed by HEC under a separate letter of intent. MW based its bid for the main client on such a basic design proposal. Throughout the project, HEC proposed design changes, which, as MW claimed, were not in accordance with the contract, particularly the EPC delivery plan and output specification. As a result, MW as an EPC contractor, had to bear higher than expected costs in constructing the plant. The contract set out that the consultant warrants that HEC has and will exercise “*all the reasonable skill, care and diligence*”. Other obligations, such as designing in compliance with the EPC delivery plan, specifications, are explicitly stated to be subject to such an overriding duty of care.\(^\text{242}\) It means that carrying out the work in accordance with the contractual specification, if it is negligent, would amount to a breach of contract. However, if it could be possible to deliver a non-negligent design by complying with specifications and the delivery plan, the consultant must have done so. Nevertheless, due to the consultant’s design being not in compliance with the delivery plan, any costs consequences thereof may be borne by the consultant, subject to particular facts of design changes’ rejection or approval by MW – however, this issue has not been decided in these proceedings.\(^\text{243}\) It has been clearly concluded in the Mw High Tech case that all obligations were subject to a duty of care.\(^\text{244}\) This case, even if not dealt directly with the fitness for

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\(^\text{239}\) ibid 58.

\(^\text{240}\) Dennys, Clay and Atkin Chambers (n 15) 401.

\(^\text{241}\) *Mw High Tech Projects UK Ltd v Haase Environmental Consulting GmbH* [2015] EWHC 152 (TCC).

\(^\text{242}\) ibid at [15], [45].

\(^\text{243}\) ibid at [57].

\(^\text{244}\) Bailey (n 96) 141.
purpose concept, has demonstrated that a duty to exercise reasonable skill and care can be overriding other obligations if so provided under the contract.

A similar issue concerning the operation of a reasonable skill and care duty and design life provisions has been considered in the Australian Baulderstone case. Specifications of the contract explicitly set out that “The various elements to be constructed under this Contract shall have a maintenance free design life of 50 years...” From the first glance, such a provision imposes a strict duty on a contractor to achieve a specific result. However, the conditions of the contract obliged the contractor in designing and executing works to exercise skills and care that is necessary for such purposes and, particularly, to warrant that the works shall be “suitable and adequate for their respective functions and purposes”. The court found that such provisions should together be construed as obliging the contractor to exercise due care and skill in carrying out the design that would reach its intended design life.

These judgements demonstrate that for the duty of reasonable skill and care to override any obligation to achieve a particular result, clear wording in the contract is required.

It has been concluded in chapter 3.2 that the fitness for purpose warranty may be implied in the design and build contract, which would also cover the design obligations. However, if the contract expressly provides that the contractor is required to exercise reasonable skill and care with regard to its design obligations, it may be considered that the parties excluded the fitness for purpose warranty.

4.2 Contractual scope and the intended purpose of deliverables

This chapter analyses the limitation of purpose itself depending on the specific scope and facts, reasonableness or the wording of the clause.

4.2.1 Identified purpose of works and services

Absolute warranty of success should be distinguished from a strict obligation to comply with the agreed performance criteria. Even if a fitness of purpose is an absolute obligation, it is always limited by the identified purpose. In the Australian case Barton v Stiff, the employer claimed that the contractor failed to satisfy fitness for purpose obligation in a build contract because the used bricks were not resistant to salty groundwater. However, soil reports provided at the time of contract execution did not demonstrate that such uncommon groundwater conditions containing salt have been found. Justice Hargrave confirmed that the parties intended that the completed building would

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245 Baulderstone Hornibrook Engineering Pty Limited v Gordian Runoff Limited (formerly GIO Insurance Limited) & Ors (n 182).
246 ibid at [1079].
247 Bailey (n 96) 141.
248 ibid 128. Furst and Ramsey (n 14) 76.
be “proof against any groundwater conditions likely to be encountered at the land”, and the salty water had not and could not have been anticipated.\textsuperscript{249} The contractor’s deliverables should be \textit{reasonably} fit for their purpose so that there could be shortcomings in achieving result despite the contractor’s compliance with the duty.\textsuperscript{250}

If the case of \textit{Barton v Stiff} considered the reasonableness as a limitation of fitness of purpose warranty, the \textit{Cadbury} case (described in chapter 3.2.2 above) dealt with the purpose, which was deemed to be too imprecise to imply any strict undertaking. The court concluded that ADT (the contractor) in providing fire suppression system was not aware of the hazardous nature of the process, how the fire could spread and escape the area and how that production lines were operated – therefore, a particular purpose was not communicated to the contractor.\textsuperscript{251} Due to the lack of the mentioned details, the contractor provided the system with sensors of not the right type and located in such places in the hopper that could not detect the deep-seated and not-developed fire.\textsuperscript{252} Even if it is clear that the provided information was not sufficient to formulate the precise purpose of the works/services, when can it be argued that it was the contractor’s responsibility to inquire for further details? Should not it be a standard for a professional in the industry, such as the designer of a fire suppression system, in this case, to ask for the specifics of the factory’s operation?

Lupton compared two English cases, which may contain some answers to these questions.\textsuperscript{253} In the case of \textit{Cammell Laird v Manganese Bronze & Brass}, the supplier of propellers has been informed that their purpose is to be suitable for a particular ship and engine number, which has been considered sufficient to determine the required materials or inquire for other details.\textsuperscript{254} On the contrary, in \textit{Slater v Finning}, the supplied camshafts for a fishing vessel broke as well as two of its replacements. It had been determined that there was no defect in the camshaft itself. However, it did not suit that vessel due to an abnormal tendency to resonate, the particularities of which had not been provided by the buyer. Therefore, the court concluded that the buyer should have made known any non-ordinary purpose (in this case - unordinary vessel conditions) for which the product was to be used if it expected to rely on an implied fitness for such purpose.\textsuperscript{255} That is why it is important for employers to

\textsuperscript{249} Lupton (n 70) 335.
\textsuperscript{250} ibid. Also see Supply of Goods and Services Act 1982, s. 4(5).
\textsuperscript{251} Trebor Bassett Holdings Ltd & Anor v ADT Fire and Security Plc (n 173) at [56-57].
\textsuperscript{252} ibid at [38-39]
\textsuperscript{253} Lupton (n 70) 15–16.
\textsuperscript{254} ibid.
pay attention to the details of information shared and to understand if certain details could be reasonably expected to be enquired by contractors based on that.

Yellow FIDIC standard form establishes that the works’ suitability shall be for the purpose “for which they are intended, as defined and described in the Employer’s Requirements”, and the ordinary purpose should be analysed only if the Employer’s Requirements do not set it out.\textsuperscript{256} Such wording itself may be considered as a limitation of warranty (if the contract narrowly defines such purpose) when compared to what is implied under English law – objective consideration of what reasonably would have been required.\textsuperscript{257}

It is essential that the employer actually understands what elements should identify that the works are not suitable. It is common that plants and other buildings as a whole should pass the tests on completion for receiving certain certificates and putting the works into operation. However, in terms of a fitness for purpose duty, failure to successfully pass the test does not necessarily mean that the warranty is breached by the contractor unless it has been specifically agreed so by the parties.\textsuperscript{258} In case the parties include a pain/gain sharing scheme regarding the plant performance (when a contractor should pay liquidated damages or receive a bonus depending on the plant’s output), the poor performance of the plant will usually not mean that the warranty on suitability has been breached since another commercial mechanism is in place.\textsuperscript{259}

4.2.2 Other limitations by the contractual scope of obligations

In addition to the limitation of fitness for purpose duty by narrowly defining the intended result of works to be achieved, the scope of all obligation under the contract should be taken into account. The contracts may limit the responsibility of the contractor with regard to design when it has partially been provided by the employer. It could be stipulated that the employer’s responsibility for provided design is retained. If FIDIC Yellow Book is analysed, it will be clear that, for example, the responsibility of the contractor for errors in the employer’s requirements is limited. In particular, the contractor is entitled to variation if errors are notified after the period for scrutinizing the documentation expires in case it is determined that an experienced contractor exercising due care would not have discovered the defect earlier when examining the site prior to tender submission or scrutinizing the documents.\textsuperscript{260} Under English law, the employer does not warrant that the provided site information is accurate, and the contractor is required to get acquainted with the necessary information itself in order to carry out

\textsuperscript{256} FIDIC Yellow Book 2017, Sub-Clause 4.1.
\textsuperscript{257} Dennys, Clay and Atkin Chambers (n 15) 422.
\textsuperscript{258} ibid 424.
\textsuperscript{259} ibid.
\textsuperscript{260} FIDIC Yellow Book 2017, Sub-Clause 1.9.
the works in a certain manner.\textsuperscript{261} It has been suggested that the Robin Rigg case might have a different outcome if the parties’ contract was based on such FIDIC Yellow Book terms and if none of the experienced contractors would have discovered the error in DNV standards in accordance with Sub-Clause 1.9 (though such hypothetical situation is not analysed here, since the content of the employer’s requirements and other circumstances also played an important role in the Robin Rigg case).\textsuperscript{262} On the contrary, FIDIC Silver Book fully allocates the risk of any errors and incompleteness in the employer’s requirements to the contractor with only a few exceptions (for example, when the contractor cannot verify the data),\textsuperscript{263} thus, making a fitness for purpose obligation significantly more burdensome. It is though debated whether such onerous obligations are justified when the contractor would be responsible for almost all employer’s design and other contributions.\textsuperscript{264}

4.3 Non-reliance on the skills of the contractor

The formulation of the purpose of the deliverables is connected to the issues of reliance on the contractor’s skills. If the employer has not placed reliance upon the expertise of the contractor, a fitness for purpose duty will not apply.\textsuperscript{265} Under section 4 of the UK Supply of Goods and Services Act, the requirements of goods to fit for a communicated particular purpose does not apply if the employer “does not rely, or that it is unreasonable for him to rely, on the skill or judgment” of the contractor. The burden of proof with regard to substantial reliance lies with the contractor.\textsuperscript{266} From the wording of this statutory provision, it is not clear how such non-reliance can be inferred from the contract and what it means. As has been stated in Grant v Australian Knitting Mills, it is very rare that such reliance is expressly included in the agreement: it should commonly be implied from the circumstances.\textsuperscript{267} The question of the employer’s reliance on the contractor is closely related to the determination of the contractor’s freedom of performance, as the limitation of which may contribute to establishing a non-reliance, which will be discussed below.

The circumstances should be exceptional in order for an employer not to reasonably rely on the skill of a contractor, the example of which is, as observed in Slater v Finning\textsuperscript{268}, an insufficiently expressed

\textsuperscript{261} Bailey (n 2) 328–329.
\textsuperscript{263} FIDIC Silver Book 2017, Sub-Clause 5.1.
\textsuperscript{264} Huse (n 54) 148.
\textsuperscript{265} Charrett, ‘Design Life or Service Life: What Is the Difference?’ (n 110) 34.
\textsuperscript{266} Hudson and others (n 13) 395-396.
\textsuperscript{267} Trebor Bassett Holdings Ltd & Anor v ADT Fire and Security Plc (n 173) at [49] regarding Grant v Australian Knitting Mills (1936) AC 85.
\textsuperscript{268} See the description of the case in chapter 4.2.1.
purpose. On the contrary, in the case *Cammell Laird v Manganese Bronze & Brass* (also mentioned in the previous chapters), the court found that the affirmative reliance has been demonstrated, which constituted the foundation of a contractual relationship. To remind the facts, the contractor was informed about the ship and type of engines for which the propellers were to be supplied, but the choice of blades and other elements were left for the judgement of the contractor.

It is rare that a contractor has full freedom in performing its obligations because it is always carried out according to the employer’s order. The degree of freedom, though, is usually determined based on the extent of details provided by the employer in its specifications. As has been concluded in chapter 3.1.2, the obligation to perform the works in compliance with the employer’s requirement is overridden by the duty to complete the works that fit their purpose. However, at the same time, detailed specifications of the employer may contribute to establishing non-reliance of the employer on the contractor’s own skill, since, generally, the departure from the technical requirements at its own discretion is usually a breach of contract itself. For example, in the event the contractor is obliged to follow the very detailed design provided by the employer, there usually may not be any reliance.

When it comes to the materials used in construction, the contractor may be free to choose materials suitable for usage in the building. However, the employer’s requirement may also specify either a particular type of material or a selection of a few kinds to be chosen by the contractor. In this case, the limited options which contractor can opt for demonstrating that the employer does not rely on its expertise, which leads to the contractor not warranting the fitness of such materials for their purpose. However, in this case, the contractor may still be liable for using inadequate materials chosen by the employer in case it is aware of their unsuitability and do not warn the employer of potential negative consequences, provided that the fault of the contractor is proven. In *Rotherham Metropolitan Borough Council v Frank Haslam Milan & Co*, the employer’s requirements listed types of materials, which could be used for the hardcore site fill, including a slag, though without details on what kind of slag. After the slag material had been used, it turned out that it has expansive capabilities that cause the ground floor to crack. Even though the contractor owed an implied duty that materials to be fit for their purpose, the court concluded that in this case, the employer could not rely on the judgement of the contractor since the choice of materials has specifically been determined by engaged

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269 Slater v Finning Ltd (n 255). It has also been pointed out in Trebor Bassett Holdings Ltd & Anor v ADT Fire and Security Plc (n 172) at [49].
270 Lupton (n 70) 326.
271 Glover (n 65) 48.
272 Bailey (n 2) 1281.
273 ibid 1285.
274 Lupton (n 70) 326.
experts.\textsuperscript{275} Such a decision is important to pay attention to as it is often that employers hire professionals to prepare the technical specifications. Therefore, it is advised to explicitly set out that, for example, the provided choice of materials or other requirements are only minimal and should be reviewed and confirmed by the contractor, who will eventually be responsible for the completed works. Alternatively, the explicit warranty should be included in the contract or any other indication of warranty to be given by the contractor.\textsuperscript{276}

Non-reliance of the employer could be established in the case of subcontracting. Sometimes, the nomination of a subcontractor by the Employer may indicate that the employer does not rely on the main contractor with regard to a certain scope of works, particularly if the main contractor could not object to the appointment.\textsuperscript{277} In such a case, it can be inferred that there is no implied obligation of fitness for the purpose given by the main contractor with regard to subcontracted works.\textsuperscript{278} However, partial reliance that constitutes a substantial inducement for the employer to enter into an agreement with the contractor may be enough to imply a fitness for purpose warranty with respect to the relied upon scope.\textsuperscript{279} In the case \textit{University of Warwick v Sir Robert McAlpine} of 1988,\textsuperscript{280} it has been decided that the instruction to the main contractor by the employer to use methods of remedial works advised by specific subcontractors showed that the employer did not rely on the main contractor’s skill and judgment. The fact that these subcontractors were not formally nominated by the employer and considered to be domestic did not affect the conclusion.\textsuperscript{281}

Finally, another way of restricting the freedom of performance, which would indicate that the employer does not fully rely on the skills of the contractor, could be via variations at the execution phase. The situation may occur that the employer requests changes to the works, which, if implemented, would lead to such works not being fit for their purpose. It has been considered in \textit{Hall v Burke},\textsuperscript{282} where the employer instructed variations to the marble cutting machines built by the seller, which should also have achieved a specific purpose. The Court of Appeal concluded that contractors are entitled to refuse to make ordered alterations to works if such variations would lead to the breach of a fitness for purpose warranty. However, if the customer, despite the rejection of the contractor, insists on variations, the agreement would have deemed to be altered, and the contractor would not be responsible for the warrantying fitness of the works to the initially agreed purpose. Then, the

\begin{footnotes}
\item[275] ibid.
\item[276] Bailey (n 2) 1281.
\item[277] Furst and Ramsey (n 14) 414.
\item[278] Hudson and others (n 13) 1046; Furst and Ramsey (n 14) 414.
\item[279] Furst and Ramsey (n 14) 414.
\item[280] Dennys, Clay and Atkin Chambers (n 15) 400.
\item[281] ibid.
\end{footnotes}
contractor’s obligation would transform to performing obligations merely “according to a given plan”. Provisions with this regard can be found in FIDIC standard forms, under which the contractor is entitled to refuse to execute the variation upon prompt notification if it leads to the completed works not being fit for purpose.

4.4 Contractual exclusion of warranties

The exclusion of a warranty can be determined based on the contractual wording and surrounding circumstances (being an issue of facts and degree). As has already been demonstrated, the absence of reliance on the contractor’s skills could be one of the ways to demonstrate that no warranty is given. The intention of the parties to exclude the warranty could be determined if they both know that necessary materials can be obtained only on terms that limit the contractor’s entitlement of recourse with regard to defects in materials. Perhaps, the most obvious method to limit or exclude the application of a fit for purpose warranty is to set it out in the agreement explicitly. Even if the purpose is clearly defined in the contract, the parties are free to exclude the application of a fitness for purpose obligation, which may otherwise be implied. It should be kept in mind, though, that limitation of liability is subject to the Unfair Contracts Terms Act of 1977 (“UCTA”). Section 20 of the UCTA clearly provides that contractual provisions excluding or limiting the liability arising from clauses on implied fitness for purpose warranty under the Sale of Goods Act 1979 are effective only if they are reasonable and fair. In accordance with the guidelines for reasonableness’ test application, such matters as the bargaining positions, any incentive for the employer in agreeing to the term, knowledge of the limitation’s extent, supply of goods according to specific order should be taken into consideration.

The issue of the reasonableness of a term excluding liability for fitness for purpose has been considered in Balmoral Group v Borealis. Balmoral produced oil tanks by using materials supplied by Borealis that, as Balmoral claimed, turned out to be not suitable and caused massive losses due to tanks’ failures, but unsuitability has not been established in proceedings. The Borealis’ terms contained an exclusion of any implied warranties in statute, common law or otherwise with regard “to the quality or fitness for any purpose of the goods...are expressly excluded to the fullest extent

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283 ibid 123–124.
284 FIDIC Yellow Book, Sub-Clause 13.1(e), FIDIC Silver Book, Sub-Clause 13.1(e).
285 Furst and Ramsey (n 14) 74.
286 ibid 75.
289 Balmoral Group Ltd v Borealis [UK] Ltd. & Ors [2006] EWHC 1900 (Comm).
290 Several affiliates located in the UK, Denmark and Norway were involved.
permitted by law”. Furthermore, the parties did not negotiate such terms as they were rather “take it or leave it” conditions. Justice Clarke stated that this allocation of risks when the latent defects should be fully born by the buyer, which was left only with a right to ask for a replacement of defective product or return of the payment, is not fair or reasonable. Without analysing other detailed factual and legal issues of this case, it is referred to as a demonstration that practitioners need to ensure that such terms excluding liability are fair and reasonable.

Under English law, if the express provisions on excluding strict warranties are included, the standard of obligation to achieve the intended result would be interpreted applying the duty of reasonable skill and care, so that the negligence has to be demonstrated in order for the contractor to be liable for not achieving the purpose of performed services and works.

In order to get industry perspective to the fitness for purpose obligations, it is interesting to look at the executed contracts in relation to certain projects. In recent years, it has become a common practice to explicitly exclude fitness for purpose warranties in the wind energy industry, often involving new technologies, especially in wind turbine and foundations supply and installation contracts. Perhaps, the Robin Rigg case played a role in it by bringing more attention of practitioners to possible consequences of such strict obligation. Another reason is the relatively small number of wind turbine manufacturers, which could be an advantage for their negotiation position. However, since the result of the carried works, particularly the annual energy output, is crucial for developers, parties take other mitigation measures. For example, the turbine manufacturer is usually also a contractor in service and maintenance agreement (“SMA”) for a period of 5-15 years after completion of installation works. Such SMA sets out an availability warranty that triggers liquidated damages in case the energy output is lower than expected (or provides for a bonus in the event of a contrary situation). Therefore, a wind turbine generator supplier has a strong financial incentive to deliver and install goods of good quality and performing the intended function. Another mitigation measure that could be undertaken by the employer when a fitness for purpose warranty is excluded is agreeing on very detailed and well-investigated technical specifications and codified standards that the contractor has to comply with. It is often a preferred solution since both parties usually have resources and experience to develop detailed specifications, which should be abided by, rather than rely on a general implied or explicit fitness for purpose warranty, the effect of which may not always be predictable.

291 Balmoral Group Ltd v Borealis [UK] Ltd. & Ors (n 289) [378].
292 ibid at [423].
293 ibid [422].
294 Helm and others (n 28) 41.
295 In order to gain such perspective in the application of fitness for purpose obligation provisions, the agreements of a few selected offshore wind farms construction projects have been reviewed.
Due to the technologies used in offshore wind farm construction are relatively unproven, having both design and build responsibilities imposes a substantial risk on contractors. Therefore, it is more common to see a contracting design and supply scopes to different entities, in particular, with regard to wind turbine foundations, which safeguards the suppliers. It has also been seen that such contractors having only design responsibilities, which usually already do not imply the fitness for purpose warranty, insist on expressly setting out that there should not be any implied undertaking to give a fitness for purpose warranty. Other supply agreements regarding the works, which should fully or partially be designed by the employer (often concerning foundation supply), may stipulate that the works should have a certain design/service lifetime, though only with regard to contractor’s design if there is any. Furthermore, it is sometimes stipulated in agreements that the references to design life or similar characteristic of works shall not constitute any express or implied warranty.

4.5 Concluding remarks

Fitness for purpose warranty’s scope can be limited if it is expressly stated to be subject to a duty of care obligations, so that failure to meet the performance criteria (purpose) agreed may be excused if it was not possible to do so without not being negligent.

Furthermore, the contractual description of the works’ purpose may often be construed as limiting the purpose for which the goods could otherwise serve. An imprecise definition may even lead to the conclusion that the contractor has not been informed of the purpose. Since the scope of warranted goods should be understood in light of all other obligations, some risks may be transferred to the employer by agreement (for instance, explicit provisions that the contractor do not bear responsibility for errors in the employer’s documents).

Circumstances of the project and contractual relationship may demonstrate that the employer actually does not rely on the skill and judgement of the contractor, in which case the fitness for purpose warranty cannot be implied. For example, employing another professional for making construction decisions may contribute to proving that there is no reliance by the employer established. Also, in the absence of the wording to the contrary, allowing to choose materials only from a few selected possibilities may indicate that the contractor did not have freedom of choice and cannot be liable for materials’ unsuitability.

The final considered option for the contractor to avoid liability for the works not fitting their purpose is to explicitly exclude such liability in the contract, which has been often seen in wind farm construction projects.

296 Constable (n 120) 19.
5 Construction of the fitness for purpose concept under Danish law

This chapter will discuss whether the “fit for purpose” concept in its understanding under common law exists in Danish law. When comparing to Danish law, it will be of high importance to find out (a) the basis of liability of contractors under construction contracts, (b) the strict liability basis with regard to delivered works and services, if any, and (c) the enforceability of contract wording requiring the certain works to be fit for purpose. The following chapters will also examine the contractor’s obligations under standard contract forms, case law with regard to the works, materials and design, and the legal instrument closest to the fitness for purpose warranty.

5.1 Liability standards under Danish construction law

Under subclause 12(1) of the general conditions for building and construction works and supplies ("AB 18"), the works should be carried out in compliance with the agreement, good professional practices and the instructions of the employer. Such provisions that also reflect Danish general construction law is understood as constituting a fault ("culpa") liability basis, which is “strengthened” or “with the reverse burden of proof” in relation to defects, since the identified defects should, as a starting point, be remedied.297 The fault rule is often called a “strict fault rule” (in Danish – “strenge culperegel”) due to the contractor being obliged to prove that the defect did not occur as a result of its negligence.298 Such fault liability corresponds to the traditional liability basis for damages in Danish contract law, while the designated cases when a strict liability basis applies are rather exceptions to the general rule.299 In addition, a contractor may become liable if it guaranteed against a particular breach under the contract.300

5.1.1 Liability basis with regard to materials

The provided materials under construction projects shall be of “a customary good quality” unless otherwise has been specified in the agreement.301 Clause 47 of AB 18 further substantiates what should be considered defective. As a general rule, if the materials do not live up to the agreement, they should be considered defective regardless of whether the contractor can be blamed or not, with a few exceptions when such (almost) strict liability cannot be imposed (for example, the contractor’s freedom of choice has been limited to such extent that it was not possible to procure defect-free materials).302 Under subclause 47(3), the materials should generally be fit for the used purpose (in

297 Hansen (n 52) 7.
298 Torsten Iversen, Karnov commentary no. 304 to chapter G of AB 18 (accessed on 16 May 2021).
299 Ruth Nielsen, Contract Law in Denmark (Kluwer Law International 2011) 181.
300 ibid.
301 AB 18, subclause 12.
302 Torsten Iversen, Karnov commentary no. 304 to chapter G, no. 307 to subclause 47(2) of AB 18 (accessed on 26 April 2021).
Danish – “egnet til formålet”), which, at least at a first glimpse, resembles the implied obligation of the contractor under English law. However, the contractor should not be liable for defects in relation to unsuitable materials if (a) the contractor establishes that according to the construction industry knowledge at the time, the material was admitted to be suitable, or (b) the employer’s requirements specified the use of that precise material type. Therefore, the implications of the phrase “fit for purpose” in such a clause should not be understood as the English law like-named concept.

Therefore, the contractor may use the “state-of-the-art” defence set out in para. (a) of subclause 47(3) of AB 18 when the obligation to provide suitable materials is not fulfilled. Such provision reflects the established Danish case law concerning the materials that later prove to be not fit for the purpose.303 The contractor, though, has an obligation to inform the client in case he decides to use any methods or materials that have not been proven, except when the use has been instructed by the employer.304 Such duty is limited to the disclosure but not to the extensive study on material or method suitability.305 In one of the recent cases TBB2018.907,306 the main contractor was hired for the renovation of the building, where he had to select the materials to be used in the exterior walls. In the spring of 2013, magnesium-oxide (MgO) boards have been chosen by the contractor, even though it was relatively new and untested material (used from approx. 2010 – 2-3 winters) the experience about the usage of which has been mentioned in the industry journal BYG-ERFA only in December 2013307. Within a few years, it has been found that the material absorbs moisture from the air and thus not suitable for the Danish climate. Despite the lack of knowledge within the construction industry at the time the materials were chosen, the arbitral tribunal found the contractor liable for defects because the contractor did not warn the consultant and the employer that the materials were new, had not been tested before, or there were other circumstances that could give rise to the increased attention.

It is notable that in Danish scholarship, a common law fitness for purpose concept has sometimes been analysed in relation to such “development damages” (in Danish – “udviklingsskade”) when the defects/damages occurred at a stage later than the works’ completion due to newly discovered knowledge that the materials are not suitable for the particular purpose (above-mentioned subclause 47(3) of AB 18).308 It is though only an individual example when the fitness for purpose warranty can come into play under the English law (namely, that the contractor is liable for development damages

303 Torsten Iversen, Karnov commentary no. 310 to subclause 47(3) of AB 18 (accessed on 26 April 2021).
304 AB 18, subclause 12(3).
305 Torsten Iversen, Karnov commentary no. 113 to subclause 12(3) of AB 18 (accessed on 3 May 2021).
307 After such publication, the materials would not be considered new and untested. See TBB2019.677, Decision issued on 7 May 2019 by the Danish Building and Construction Arbitration Board, in case no. C-14199.
if he has a duty of supplying the goods fit for purpose), and, perhaps, just the relevant Danish arbitration practice in the recent decade made it a frequently analysed issue. A good demonstration of such “development damage” risk (though in relation to design but not materials) under English law would be the Robin Rigg case discussed in chapter 3.1, when the design parameters of transition pieces in the wind turbine foundations included in the international standard turned out to be containing defects, what led to such foundations not being able to withstand the loads for a warranted lifetime. The Danish arbitration practice shows that the warranties would not be interpreted in a way that contractors would assume the liability for such “development damages”, which is in alignment with subclause 47(3) of AB 18. However, such a “state-of-the-art” defence is more of a demonstration of implied rules, which could be possibly overruled if so agreed by the parties, when the contractor undertakes the obligation to provide warranty (in Danish - “garanti/tilsikring/indståelse”), which is discussed in chapter 5.2 below.

Another ground for relief from liability in case the used materials are unsuitable is “if the client has demanded the use of a specific material”, which has been complied with. Such provision (which is also consistent with the case law) relates to unsuitability for the purpose (in Danish - formålsuegnet) but not manufacturing defects. In TBB2000.252, the contractor undertook to perform the roofing works by using material Corovin, which was chosen by the employer’s architect without informing the employer. After completion of building works, it became obvious that the roof is not waterproof due to, as the reports showed later, the unsuitability of the Corovin for a roof’s under-layer. The arbitration tribunal concluded that the contractor is not liable for the roof’s failure since it did not have an influence on the choice of material and assumed the employer’s approval thereof. Furthermore, the contractor did not know and, in this case, should not have known that the chosen material is relatively new and unproven. Such an approach to risk allocation with regard to materials that have not been freely chosen by the contractor is similar to the non-reliance concept in English law, according to which the fitness for purpose warranty cannot be implied.

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309 It refers to arbitration cases concerning compensation of damages as a result of MgO (magnesium-oxide) boards used in approx. 2010-2015 years as wind break panels turning out to be unsuitable for the Danish climate. For example of such cases analysis, see Erik Hørlyck, ‘MgO-Kendelsen Og Materialeansvaret’ [2017] TBB2017.647. The analysis of such cases is beyond of the scope of this thesis, as not being directly related to a fitness for purpose obligation.

310 Oggesen (n 308) 6.

311 Torsten Iversen, Karnov commentary no. 310 to subclause 47(3) of AB 18 (accessed on 26 April 2021).

312 ibid.

313 AB 18, subclause 47(3)(b).

314 Torsten Iversen, Karnov commentary no. 312 to subclause 47(3) of AB 18 (accessed on 26 April 2021).

To sum, the starting point for the contractor’s liability basis in relation to unsuitable materials is that it is not strict due to the possibility to refer to the lack of knowledge within the industry at the time. However, it should be analysed in chapter 5.2 below whether the explicitly agreed terms warranting certain qualities of materials would impose a strict obligation on the contractor.

5.1.2 Liability basis with regard to design

The designer in Danish projects is usually appointed under general conditions for consultancy services for building and construction (ABR 18). Design responsibilities are also regulated under build contracts (AB 18) or design and build (turnkey) contract (ABT 18). Subclause 49(1) of ABR 18 sets out that the consultant’s liability for defective services is under the general law of damages. Therefore, it refers to the fault liability (culpa), which should be assessed, taking into account the requirements of a professional adviser in the industry at the time of act or omission.\(^\text{316}\) When the design proves to be unsuitable at a later stage despite the designer’s compliance with the common practice at the time of designing, the risk of such development damages is to be borne by the employer.\(^\text{317}\) Designing in accordance with the knowledge at the period of construction would discharge the liability for design also in turnkey contracts.\(^\text{318}\)

The contractor should provide design in compliance with the agreement, good design/consultancy practices (e.g. relevant industry standards) and the employer’s instructions.\(^\text{319}\) Under ABR 18, the defect will be established only in case of failure to comply with such obligation.\(^\text{320}\)

It is often that the contractor under the build contract has to execute the works in compliance with functional requirements, in which case the necessary design should always be provided by the contractor.\(^\text{321}\) An example of such function (purpose) could be the amount of air in litres to be filtered in the ventilation. However, the fact of including such a requirement does not imply that the contractor is strictly liable for not achieving such a result or, in other words, that the warranty is given.\(^\text{322}\) If the contractor, who originally did not have design responsibilities, make a design proposal, he may be held liable for such design and will have to investigate the design suitability. Though if the engineer reviews and approves such proposals, responsibility may often be apportioned.\(^\text{323}\)

\(^{316}\) KBET 2018 nr 1570 Report on general conditions in construction and civil engineering.

\(^{317}\) Torsten Iversen, Karnov commentary no. 187 to subclause 49(1) of the ABR 18 (accessed on 7 May 2021).


\(^{319}\) Subclause 17(3)(1) of AB 18, subclause 18(2) of ABT 18, subclause 9(1) of ABR 18.

\(^{320}\) Subclause 42(1) of ABR 18.

\(^{321}\) Subclause 17(1) of AB 18.

\(^{322}\) Anders Buch and others, AB 18 (Karnov Group Denmark A/S 2020) 268.

\(^{323}\) Iversen, ‘Entreprenørens Projekteringsansvar’ (n 318) 379.
In turnkey contracts, the contractors usually have more responsibility with regard to the delivered works. In T:BB 2013.654 VBA, the contractor was instructed to design and construct two daycare institutions and some other facilities, where the problems with water intrusion occurred as a result of heavy showers. The arbitration tribunal stated that the contractor breached the obligation to make the turnkey contract function as a whole. It had to point out specific risks following from the buildings’ location. However, even this case does not entail another – strict – liability standard. Furthermore, the employer’s specifications may contain more detailed instructions for projects than only functional criteria, in which case the contractor would generally not bear responsibility for the employer’s prescribed solutions.\footnote{ibid 375.}

AB 18\footnote{Subclause 47(4).} and ABT 18\footnote{Subclause 45(4).} explicitly set out that the works must have characteristics that have been warranted by the agreement. Thus, the contractor is obliged to carry out the works and services (including design) in accordance with such warranty if it has been agreed. Even if similar provisions are not contained under the ABR 18 standard, they can, of course, be agreed upon by the parties. The breach of warranty would be a basis of liability, not conditional upon any design defects found and negligence of the contractor. Its example in relation to the design can be a process warranty of the contractor designing a treatment plant.\footnote{Michael Gjedde-Nielsen and Hans Hansen Lykke, ABR 18 (Karnov Group Denmark A / S 2021) 285.} It has been suggested that such warranty imposing strict liability is contrary to the fundamental nature and scope of the advisory services of, for instance, an architect or a designer, because their obligations are characterised as “to make an effort” (in Danish – “bestræbelsespligt”) rather than “to achieve the result” (in Danish – “resultatforpligtelse”)\footnote{ibid 284–285.}, and the provided advice will not be easily considered as implying a warranty. Also, similarly to the UK, professional liability insurance does not usually cover such warranty commitments.\footnote{ibid 58.}

Though it does not seem correct to argue on the liability regime and nature of design obligations by classifying them as “obligations to make efforts” (as explained in chapter 2.2), it could just be agreed that such a strict warranty undertaking is indeed not common and difficult to obtain from contractors.

5.2  Fitness for purpose as a warranty under Danish construction law

One of the predominant approaches to fitness for purpose clauses in Danish law is constructing them as warranties (in Danish – “garanti”). A warranty is a promise (commitment) that a certain condition

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\begin{itemize}
  \item \footnote{ibid 375.}
  \item \footnote{Subclause 47(4).}
  \item \footnote{Subclause 45(4).}
  \item \footnote{Michael Gjedde-Nielsen and Hans Hansen Lykke, ABR 18 (Karnov Group Denmark A / S 2021) 285.}
  \item \footnote{ibid 284–285.}
  \item \footnote{ibid 58.}
\end{itemize}
exists or that the object of a contract will possess specific properties, the liability under which is generally strict and not conditional on establishing fault (culpa).

Pursuant to subclause 45(4) of ABT 18 and subclause 47(4) of AB 18, the works must have the properties ensured/warranted (in Danish - “tilsikret”) by the agreement (for example, the works being waterproof or suitable for climatic conditions). This assurance can be characterised as a warranty (in Danish – “garanti”), “fit-for-purpose commitment”, or any other similar type of undertaking regarding the works that put the recipient in a better legal position in case of counterparty’s breach that would be otherwise implied under applicable law (as explained in chapter 5.1). For instance, such specifically agreed warranty is an independent basis of liability, which cannot be avoided by reference to lack of freedom in the choice of materials or the concept of development damages risk. Thus, the defect according to subclause 47(4) may be established even if other obligations under subclauses 47(1) and 47(2) are complied with.

The effectiveness and the actual scope of the warranty will be dependent on its interpretation. A warranty may be related to works’ purpose or properties, functions, particularly in energy plants and other facilities, where the value is measured by such specific function or process outcome. It has been suggested that functionality and outcome (process) warranties are separate warranty types not covered by subclause 47(4) of AB 18 (which is doubtful), but, regardless of that opinion and most importantly, the liability under such commonly given warranties is also strict. For example, in KFE 77.159, a contractor was obliged to carry out the works regarding the chemical treatment plant with the agreed function of nitrogen amount reduction to around 75%. Since the achieved result was only a reduction to 50-60%, the contractor was held liable to pay compensation for additional biological treatment in order to achieve the agreed reduction level. Another case, KFE 93.153, concerned the warranty on a certain level of power curve given by the wind turbine manufacturer, which was breached.

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331 Analogous provision is also included in the ABT 18 standard form of turnkey contract in subclause 45(4).
332 Hørlyck (n 21) 499.
333 Eric Boesgaard, Henrik Fausing and Mogens Hansen, AB 18 For Praktikere (Molio 2018) 360.
334 Torsten Iversen, Karnov commentary no. 312 to subclause 47(4) of AB 18 (accessed on 3 May 2021).
335 Hørlyck (n 21) 499.
336 Oggesen (n 308) 5.
337 Hørlyck (n 21) 502.
339 Ibid.
When the contractor provides a warranty to achieve a certain result, it also has an obligation to assess the project- and construction-related conditions. It has been pointed out that in this case, the contractor should ascertain whether the tender requirements contain any errors. When the obligation to review employer’s requirements is compared to a general approach in build-only contracts where certain works’ properties have not been warranted, the contractor would only have to notify the errors without having an obligation to scrutinise the employer’s requirements (unless there is such express obligation), even if the agreement requires the contractor to review the design and inform on any found ambiguities and errors. Thus, the contractor would be liable only in case of not notifying the obvious and manifest errors.

If English law generally gives more weight to fitness for purpose warranty despite errors in the employer’s requirements, Danish law still put more emphasis on the fact that the employer’s specifications must be clear and unambiguous, even when the warranty is agreed upon. It is a general rule that the tender materials should be drafted clearly. Under established arbitration practice, such materials should be logical, easily accessible and clear, and it is the client who bears the risk of tender deficiencies, which may be interpreted as an application of a contra proferentum rule. Also, if the term imposing an obligation on the party is ambiguous, the court will construe such unclear duty as the least burdensome (otherwise called a “minimum rule” of interpretation). Therefore, for onerous or absolute undertakings, the interpretation will be even stricter.

Would the contractual provision setting out that the works shall be fit for their purpose in accordance with the employer’s requirements, as included in the FIDIC standard forms, be sufficient for establishing a warranty obligation under Danish law? It is unlikely that the mere statement that provided materials should be suitable for their purpose is enough for establishing a warranty.

curve warranty means a warranty that certain power will be generated in accordance with an average speed of wind.

341 Hørllyck (n 21) 500.
342 Buch and others (n 322) 734.
343 Karnov commentary no. 164 to subclause 19(5) of AB 18 (accessed on 19 May 2021).
344 Ibid.
345 Oggesen (n 308) 5.
346 For example, see subclause 4(2) of AB 18.
347 Karnov commentary no. 20 to subclause 4(2) of AB 18 (accessed on 24 May 2021).
348 Karnov commentary no. 23 to subclause 4(2) of AB 18 (accessed on 24 May 2021).
349 In accordance with the contra proferentum interpretation rule, ambiguous terms are construed against the party who drafted the documents in question (often may relate to the party’s standard terms). See more about such principle in Nielsen (n 299) 151.
350 Ibid.
351 Ibid 151–152.
obligation. It would also not be sufficient to describe the works’ purpose, function or other qualities for strict liability to be imposed. Thus, a clear wording that a “warranty” is given should always be included. In *UF R 1973.675*, the employer claimed damages from the architects that chose the specific aluminium as a roofing material based on the supplier’s description and Ministry of Housing’s approval, which later turned out to be unsuitable since the water could penetrate through it. The employer’s case was that the architects 1) warranted the suitability of materials and, 2) at least, were negligent in not examining the material. The Supreme Court found that the main reason for water leakage was unsuitable aluminium sheets. It had been stated that the defendants are liable since they expressed concerns regarding the use of sheets without further investigating this issue. The judgement did neither include the explanation on the architects’ liability claimed by the claimant with regard to the warranty (admittedly rejected) nor provided guidance on establishing their negligence, which is disappointing.

It is argued that there should not be a presumption that such a warranty is assumed in large construction projects (where FIDIC standards may usually apply). The reasons for this statement could be significant economic consequences in case of warranty breach, inability to get an insurance cover and difficulty in hedging the risk otherwise. It is indeed difficult to assert that any implication of a warranty will be given by the court (for the reasons stated in the paragraphs above); however, it is commercially reasonable to allow stakeholders in any projects to agree on warranty provisions explicitly.

The warranties under Danish law are often interpreted restrictively, even with regard to the development risk damage that should normally be compensated by the contractor which has provided a warranty. For example, the arbitration board in *KFE 1985.157 VBA* did not find the contractor liable for roof leakage occurring due to an insulation material not withstanding the temperature fluctuations, even though the warranty for water tightness and durability had been given. The reasoning in the judgement was that it was a common practice at the time of works execution, and

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352 Gjedde-Nielsen and Hansen Lykke (n 327) 285.
353 Buch and others (n 322) 732.
354 Oggesen (n 308) 4. Buch and others (n 322) 732.
357 Oggesen (n 308) 4.
358 Hørlyck (n 19) 501; Buch and others (n 322) 733.
such a problem was not known or was foreseeable. It, though, should be noted that the cases referred in scholarship restricting warranties in such a way are relatively old.

Also, the contractual provisions on warranties may not necessarily make the contractor liable for all damages, as a Danish arbitral tribunal sometimes may take into account the paid price or the client’s own conduct, as will be demonstrated in the cases below.

Warranty obligations may be subject to restrictions in the event of the employer’s misuse of the works, though the burden of proof will typically be the warrantor’s. In case TBB 2018.555, the employer claimed the damages due to reduced electricity production compared to the warranted amount in the supplied solar farm. The contractor argued that it was due to excessive seagulls’ excrements on the panels, the cleaning of which was the employer’s responsibility. Another reason for the reduced production has not been established in the proceedings, and no expert opinion has been obtained, as a result of which the contractor was acquitted.

A low price was taken into account when calculating damages for the warranty breach in KFE 2003.56 VBA. The parties entered into a turnkey contract for garage deck repair works, under which the contractor agreed to provide a 5-years’ warranty on the water-tightness of the joints. However, the water started penetrating through the joints shortly after handing over the works, which was consequently assessed by the expert as being not suitable. It has also been stated that the remediation of the chosen solution would not be enough to ensure water-tightness, as the complete replacement of deck cover was necessary, which was more expensive than the agreed contract price. Thus, the arbitral tribunal, while assessing the damages, pointed out that the price for an agreed solution was lower than what would normally be necessary for achieving complete water-tightness of works.

In KFE 1978.179 VBA, the contractor undertook to carry out the works concerning the installation of sewage pipes. Pipelines were originally designed by a consultant, though the final design concerning ballasting has been changed after consultation with the contractor. The contractor provided a warranty that the works would be free of technical errors regarding laying methods and installation, but the pipelines failed in the same month after taking them into use. The arbitral tribunal, though,

360 Hørlyck (n 21) 501.
361 Boesgaard, Fausing and Hansen (n 333) 361.
363 ibid, section 5.
365 ibid.
stated that the given warranty has not implied that the employer’s responsibility was discharged, so both the contractor and the employer held liable. 367 Such a decision shows that it may be difficult to predict with certainty what legal consequences the warranty obligations would have compared to analogous obligations under English law.

The lack of established understanding of the concept is also illustrated by the fact that the term “warranty” (in Danish – “garanti”) is often misused in practice. In the arbitration case T:BB 2017.915, it has been held that the contractor giving a “10 years warranty for the works and materials” actually provided a 10-years’ liability period for defects, which was negligence-based. 368 The interpretation should be made on a case-to-case basis without applying any general rules leading to too far-reaching or restrictive construction of warranties. 369 Inappropriate and inconsistent use of the “warranties” is one of the reasons for their unclear role in Danish construction law. 370 In order to avoid such misunderstanding of the warranty, some supply contracts in Denmark within the offshore wind industry explicitly clarify that the warranty of works’ specific lifetime period should not constitute the change of defects notification period agreed.

Oggesen also suggested 371 that it is possible that fit for purpose provisions could be interpreted as a warranty in some situations and industries. In the energy sector, it is common to be obliged to carry out the works for construction of energy plant, which when completed will perform its function in a certain manner – for instance, reach an agreed level of energy production. 372 It does not seem very convincing that interpretation of the provisions regarding works’ purpose as a functional or process warranty can be made only in relation to some industries but not others. It merely indicates that it is common for those industry stakeholders to negotiate such warranties, and more arbitration cases can be seen with that regard. If process warranties indeed naturally relate to energy or process plants, a functional warranty could be agreed upon in relation to any building type’s function.

In sum, there could be found similarities between fitness for purpose warranty under English law and warranties under Danish construction law, though it is not possible to conclude that such two concepts are equivalent. The fitness for purpose warranty can be implied under English law with regard to many

367 Ibid.
368 Boesgaard, Fausing and Hansen (n 333) 361. The similar conclusion has been made in KFE 83.318, where a 10-years’ guarantee with regard to the entire contract scope could not be enforced due to development damages, so that unsuitability of materials was not known at the time of construction.
369 Hørlyck (n 21) 503.
371 Oggesen (n 308).
obligations (for example, regarding materials supply), while the warranty under Danish law should be explicitly agreed by the parties, and even in such case, the enforcement and precise implications are not well-established in (not very recent and scarce) case law. A mere indication of a purpose of works in the contract would most probably not lead to the effectiveness of a warranty under Danish law. Nevertheless, the warranty agreement can still be used by the parties in Denmark as the closest alternative to the strict fitness for purpose obligations under common law, taking into account the necessity of sufficient details on the desired result and contractor’s liability which to be included to avoid restrictive interpretation.

5.3 Adoption of meaning in light of English law

It has been suggested that the interpretation of fitness for purpose obligations in the contracts that are subject to Danish law may vary depending on the chosen forum of dispute resolution so that international arbitration institutions would be more inclined to construe such clauses in light of common law understanding. At the same time, English law inspired standard contract forms such as FIDIC contracts would be construed within the Danish law framework if the dispute is referred to Danish courts or the Danish Building and Construction Arbitration Board.373

However, attention in this regard should be paid to the recent insurance case decided by the Eastern High Court of Denmark on 4 May 2018, where an all-risks insurance policy provided on English terms, even if being subject to Danish law, was partly interpreted in light of English law (the “Siri Case”).374 The case arose as a result of insurance claims for the cracks that occurred on the Siri oil platform after ten years of operation. One of the pleas in the proceedings concerned the “sue and labour” claim – the reimbursement of expenses regarding the loss prevention measures (temporary safeguarding of the facilities to avoid the risk of collapse). Section I of the insurance, including a section on sue and labour, was built on the provisions of the London Standard Platform Form. The insurers submitted that such clause should be construed in accordance with the maritime insurance law of England, under which the measures undertaken by insureds did not satisfy any of five conditions under English case law. The High Court stated that 1) this sue and labour concept is not known to Danish law as opposed to well-established understanding in English law, and 2) the parties intentionally used the standard form that is based on the English maritime law of insurance. Therefore, it has been held that such provisions should not be interpreted by reference to Danish law, particularly some relevant sections of the Insurance Contracts Act.375 As surprising as such outcome may seem, Danish law is generally

373 Oggesen (n 308) 6.
375 ibid.
recognised for its pragmatism, flexibility and reasonableness, which can be seen in contract interpretation as well.\textsuperscript{376} Further, one of the most decisive factors when interpreting the clauses, including particular technical or legal terminology, is the parties’ intention,\textsuperscript{377} which in the Siri case demonstrated the adoption of a foreign standard.

Considering Siri case, one may wonder whether the FIDIC standard contract form, which is also heavily based on common law (though not officially) and containing concepts that are well-developed in English law but not common to civil law jurisdictions, would also be partially interpreted through the lens of common law principles. For instance, such a proposition has been made by Oggesen during one of the Danish Society for Construction and Consulting law meetings.\textsuperscript{378}

It is not correct to conclude on such a general interpretation rule following on from just one decided case having specific circumstances. Even if this case is taken into consideration, it is highly unlikely that an analogous conclusion would be (and should be) reached with regard to a fitness for purpose duty. Firstly, the considered su and labour concept was stated to be a foreign concept to Danish law. Even if a fitness for purpose warranty as such is also not established in Danish law, it, in essence, concerns the strict liability and requirements to performance standard, the framework of which could somehow be seen in warranties under Danish law. The fact that the actual content of it is different due to other construction law principles of Danish law and generally not common usage by the industry may not simply point out that the English interpretation should be adopted. Secondly, the disputed section of insurance policy was clearly based on the standard form used in England, while, for example, the FIDIC standard form is an international standard. The FIDIC standard form is used worldwide in large construction projects despite the fact that some of its clauses being inspired by or drafted from a common law perspective. Even if a standard form would be decided to have been based on common law, it is not possible to choose interpretation under precise governing law, as the English, Australian or US law approaches may differ.\textsuperscript{379} For these reasons, it is considered to be unlikely that the fit for purpose provisions would be fully interpreted in accordance with the foreign law concept, but it could serve as an indicator of the parties’ intention to apply stricter liability standard, subject to the provisions of the contract and other circumstances. Anyway, while it is intriguing to see


\textsuperscript{377} ibid 245.

\textsuperscript{378} Presentation from the meeting no. 148 (20 November 2018), \url{http://www.selskabforbyggeret.dk/userfiles/files/Dansk%20Selskab%20for%20Byggeret%20-%20Fit%20for%20Purpose.pdf} (accessed on 20 April 2021). Author of this thesis has not attended the meeting and relies only on the referred presentation.

\textsuperscript{379} Cordero-Moss (n 376) 40. Author’s comment relates to tacit choice of law rather than interpretation of contractual clauses, though such argument is still very relevant for the discussion in question.
the Danish courts adopting the meaning of foreign concepts into contractual documents that subject to Danish law, it is yet to be seen how fitness for purpose clauses will be interpreted in Denmark in future.
6 Conclusion and perspectives

A fitness for purpose warranty under English law

This research aimed to analyse the concept of fitness for purpose under English law and determine its content and limitations. In construction contracts, a contractor is sometimes strictly liable for the works that do not fit to agreed or ordinary purpose. Such fitness for purpose warranty infers that liability will be imposed despite a lack of fault of the contractor. It is opposed to another performance standard often implied in construction law – reasonable skill and care – for breach of which the contractor should be at fault. However, a reasonable skill and care standard may override the fitness for purpose warranty if the contract sets out that it is subject to a duty of care; therefore, the contractor would have to achieve the warranted result as long as its actions (or lack thereof) are not negligent.

The parties may explicitly stipulate in the contract that the works, when completed, should be fit for purpose. Examples of such provisions may be found in FIDIC standard forms. Even if it is not agreed, applicable law may imply a fitness for purpose duty with regard to, for instance, supplied materials or works as a whole (including design) in design and build contracts. For comparison, the liability of a professional carrying out only design services is mostly based on fault, while a design and build contractor is strictly liable for design.

The issues concerning the content of a fitness for purpose warranty may arise if such warranty is not explicitly agreed (but may be implied by law) or if a reasonable skill and care standard applies to a part of the works (for example, to the design). Firstly, it is not very clear from the case law how design should be distinguished from workmanship or design implementation, which is always to be decided based on facts. Secondly, the application of fit for purpose duty with regard to the works may depend on establishing whether the completed works constitute the goods or the system (a bespoke design solution). For example, under the Cadbury case, the fire suppression system for a factory (being a bespoke solution tailored to a certain location) did not constitute the goods in the meaning of the legislation, so the contractor’s liability was concluded to be negligence-based. Therefore, it is submitted that the current case law is not very clear on the precise determination of what the design is, which may negatively affect understanding of a fitness for purpose warranty regarding specific contract and circumstances.

The scope of warranty will depend, among other issues, on the purpose which should be achieved. It should be noted that when the purpose is communicated by the employer, the fitness for purpose still should be reasonable. If English law implies the warranty but a specific purpose has not been agreed upon, the goods would have to be supplied fit for ordinary purpose, for which they are intended.
Further, for a strict obligation to be implied, the purpose should be communicated very clearly. For example, it is common for the contractor supplying and installing wind turbine generators to warrant that such goods will have a design (or service) lifetime of 25 years. The parties should agree whether either the design or a service lifetime is to be warranted by the contractor since these terms are often used inconsistently. The narrow definition of purpose may accordingly limit the extent of the warranty.

The duty of fitness for purpose often prevails over other obligations, such as compliance with the employer’s requirements. It means that, subject to the agreement, the contractor cannot refer to any mistakes in such technical specifications which cause the works not to be fit for purpose since he is obliged to scrutinise such requirements. Furthermore, a strict liability pursuant to the warranty in question may be imposed in spite of the works being carried in accordance with state-of-the-art industry standards. Despite such general principles, the obligations and rights of the contractor may conversely limit the fitness for purpose warranty if it is explicitly stated that, for example, the employer warrants the correctness of certain documents or obliges the contractor to use only specific material.

Thus, when interpreting the scope of fitness for purpose warranty, the agreement as a whole and other project circumstances should be taken into account. The main statutory rule excluding the implication of a fitness for purpose warranty is in case that there is no reliance of the employer on the contractor’s skill or judgement, or such reliance is unreasonable. A non-reliance should always be assessed based on all circumstances, which may include unclearly drafted purpose, listed types of materials to be used, engagement of external experts for making project decisions. Finally, the parties may exclude a fitness for purpose warranty by agreement, which should be reasonable and fair, subject to the Unfair Contract Terms Act.

*Interpretation of a fitness for purpose warranty under Danish law*

This thesis investigated what the liability standard of contractors in construction project under Danish law is and how a common law warranty of fitness for purpose could be interpreted in such a legal system. The standard liability basis of the contractor for the works in construction contracts is a fault. The defect may be established if, for instance, supplied materials do not comply with the agreement and unsuitable to their purpose. However, the liability would not be imposed if the employer has made the choice of materials or if, at the time of work performance, the materials were considered fit for their purpose within the industry.
Nevertheless, the agreement may expressly set out that certain properties of works to be warranted by the contractor. In such a situation, a strict liability basis applies with regard to provided assurance. Similarly to the English law practice, the contractor may be obliged to deliver the power plant with a certain output or supply a waterproof roof for the building. A clear wording concerning both warranty itself and the purpose should be included since a referral to the works being fit for purpose is not enough for such warranty to be implied.

When compared to English law, the warranty concept under Danish law is more restrictive. Project and contract circumstances limiting the contractor’s responsibility may include a low contract price, the employer’s own conduct (so that the liability of damages may be apportioned), unclear employer’s requirements.

Another suggested approach on fitness for purpose duty interpretation under Danish law has also been discussed – namely, adopting the meaning in light of common law, where the concept of this warranty is well-developed. There are authorities construing concepts completely unknown to Danish law within their meaning in foreign jurisdictions by applying the interpretation rule of parties’ intention. However, courts and arbitration institutions would unlikely accept such understanding concerning a fitness for purpose warranty. Firstly, there is no identical understanding of a fitness for purpose warranty under all common law jurisdictions. Secondly, a fitness for purpose warranty actually infers that a strict liability basis applies concerning the contractor. Danish law already contains similar strict undertakings, even if their content is not identical to what is implied under English law.

In future research, it is appealing to analyse contractors’ performance standards under Danish law in more detail and make a pure comparative study of a common law fitness for purpose warranty with civil law jurisdictions. In addition to analysis of laws, a study of fitness for purpose provisions and their application in all international or commonly used national contractual standard forms can be made. In order to have a full picture of contractors’ liability bases, a negligence-based liability regime may also be investigated with regard to specific scopes of works. The research has shown that many issues arise in relation to qualifying a scope of works as design in order to determine the correct liability basis, which could be thoroughly further analysed. Finally, an even more complete understanding of a fitness for purpose warranty can be reached in the context of other obligations if they are deeply analysed, for example, a contractor’s responsibility for the site data and ground conditions.
Bibliography

Publications


Andersen MB, Lære bog i Obligationsret: I (5th edn, Karnov Group 2020)


Baker E and others, FIDIC Contracts: Law and Practice (5th edn., Informa Law from Routlege 2009)

Bardel K and Minogue A, ‘Fitness for Purpose Obligations’ [2013] Society of Construction law


Boesgaard E, Fasuring H and Hansen M, AB 18 For Praktikere (Molio 2018)

Buch A and others, AB 18 (Karnov Group Denmark A/S 2020)


——, The FIDIC Forms of Contract (3rd edn, 2005)


——, The Application of Contracts in Engineering and Construction Projects (1st edn, Informa Law from Routlege 2019)

——, The International Application of FIDIC Contracts: A Practical Guide (Informa Law from Routledge 2020)


Constable A, Keating on Offshore Construction and Marine Engineering Contracts (2nd editio, Sweet


Duncan C and Hudson S, ‘Fitness for Purpose Obligations under International Standard Form Contracts’ [2018] International Construction Law Review


Furst S and Ramsey V, *Keating on Construction Contracts* (Sweet & Maxwell/Thomson Reuters 2021)


——, *ABR 18* (Karnov Group Denmark A / S 2021)


Helm U and others, ‘Fitness For Purpose v Reasonable Skill and Care: How Do English Principles Regarding Standards of Care Fit in Civil Law Jurisdictions?’ [2021] International Construction Law Review

Hørlyck E, ‘MgO-Kendelsen Og Materialeansvaret’ [2017] TBB2017.647

——, *Entreprise* - *AB 18* (8th edn., Jurist- og Økonomforbundets Forlag 2019)

Huse JA, *Understanding and Negotiating Turnkey and EPC Contracts* (3rd edn, Sweet & Maxwell 2013)


——, *Obligations Ret: 1 Del* (6th edn, Jurist- og Økonomforbundets Forlag 2019)

——, *Obligations Ret: 2 Del* (Jurist- og Økonomforbundets Forlag 2019)


Tweeddale A, ‘Fitness for Purpose - Højgaard and FIDIC’s Yellow Books’ *(Corbett & Co, 2018)*

<https://www.corbett.co.uk/wp-content/uploads/Fitness-for-Purpose-Hojgaard-.pdf>


——, ‘Methodology of Comparative Legal Research’ [2015] Law and Method

**Legislation**

The UK Unfair Contracts Terms Act of 1977

The UK Sale of Goods Act 1979

The UK Supply of Goods and Services Act 1982

The German Civil Code, s. 633 [https://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p2698](https://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p2698) (accessed on 1 April 2021)

**Authorities – common law jurisdictions**

Alexander Thorn v The Mayor and Commonalty of London (1876) 1 App Cas 120

The Steel Company of Canada Ltd v Willand Management Ltd [1966] SCR 746

Greaves & Co. (Contractors) Ltd. v Baynham Meikle & Partners [1975] 1 W.L.R. 1095


Tesco Stores Ltd. v Costain Construction Ltd & Ors [2003] EWHC 1487 (TCC)

Baulderstone Hornibrook Engineering Pty Limited v Gordian Runoff Limited (formerly GIO Insurance Limited) & Ors [2006] NSWSC 223

Balmoral Group Ltd v Borealis [UK] Ltd. & Ors [2006] EWHC 1900 (Comm)

Trebor Bassett Holdings Ltd & Anor v ADT Fire and Security Plc [2012] EWCA Civ 1158

MT Højgaard A/S v E.ON Climate & Renewables UK Robin Rigg East Limited and another [2015] EWCA Civ 407

Mw High Tech Projects UK Ltd v Haase Environmental Consulting GmbH [2015] EWHC 152 (TCC)

Fluor Ltd v Shanghai Zhenhua Heavy Industries Ltd [2016] EWHC 2062 (TCC)


SSE Generation Ltd v Hochtief Solutions AG and another [2018] CSIH 26

Authorities – Denmark

KFE 77.159
KFE 1978.179 VBA
KFE 83.318
KFE 1985.157
KFE 93.153
KFE 2003.56 VBA
U.1973.675
TBB 2000.252
TBB 2018.555
TBB 2018.907
TBB 2019.677


Standard Contract Forms
FIDIC Plant and Design-Build Contract 2nd Ed (2017 Yellow Book)
FIDIC Conditions of Contract for Construction 2nd Ed (2017 Red Book)
FIDIC Client/Consultant Model Services Agreement 5th Ed (2017 White Book)
FIDIC Conditions of Contract for EPC Turnkey Project 2nd Ed (2017 Silver Book)
General Conditions for building and construction works and supplies (AB 18)
General Conditions for design and build contracts 2018 (ABT 18)
General Conditions for consultancy services for building and construction works 2018 (ABR 18)

**Soft law instruments**
The UNIDROIT Principles of International Commercial Contracts 2016, International Institute for the Unification of Private law

**Online articles and commentaries**


Tweeddale A, ‘Fitness for Purpose - Højgaard and FIDIC’s Yellow Books’ (Corbett & Co, 2018) [https://www.corbett.co.uk/wp-content/uploads/Fitness-for-Purpose-Hojgaard-.pdf](https://www.corbett.co.uk/wp-content/uploads/Fitness-for-Purpose-Hojgaard-.pdf) (accessed on 1 April 2021)

Torsten Iversen, Karnov commentary to AB 18 (accessed on 26 April 2021)

Torsten Iversen, Karnov commentary to ABR 18 (accessed on 26 April 2021)

**Other sources**

KBET 2018 nr. 1570 Report on general conditions in construction and civil engineering.


