

The Main characteristics of FIDIC Red Book 2017

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1. Abstract

Construction contracts represent one of the most important and vital tools in the construction industry. FIDIC is commonly used in different countries and also in different types of projects. Therefore, this paper aims to provide an overall view on FIDIC Red Book (2017) in the construction industry.

Keywords: Contract, Management, construction, standard contract, Traditional contract, choice of contract, FIDIC.

2. History of FIDIC

FIDIC represents a French language acronym for Fédération Internationale Des Ingénieurs-Conseils, which means the international federation of consulting engineers.

In August 1957, it established their first contract which was the Conditions of Contract for Works of Civil Engineering Construction. The draft of the early FIDIC contracts were very similar to and based on the fourth edition of the ICE Conditions of contract.

One the major disadvantage of the original FIDIC Red Book was that it was based on providing the full design to the Contractor by the Employer or his Engineer which is may suitable for specific cases or types of projects but was not suitable for all projects. It was suitable for civil engineering and public or infrastructure projects such as tunnels, roads, bridges and water treatment plants. On the other hand, it was not so suited for some projects specially where the major items of plant were manufactured away from site. For this reason, in 1963, they established the first edition of the “Yellow Book” which was a new type of FIDIC contract that was more suited with mechanical and electrical works. This contract considered the characteristics of these types of projects by considering testing and commissioning. The second edition of “Yellow Book” of was published in 1980.

In 1987, FIDIC revised the Red and Yellow Books and new editions were published. In 1996, FIDIC published a supplement to provide the user with an option for a Dispute Adjudication Board and an option for payment on a lump sum basis rather than re-measuring based on a bill of quantity.

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² How to cite this paper: Kolb, M.H.; Al Anwar, M.A.; Baraka, H. (2019). The Main characteristics of FIDIC Red Book 2017; *PM World Journal*, Vol. VIII, Issue VIII, September.

In 1994 FIDIC started reviewing of both the Red and the Yellow Books and preparing to establish the Orange Book.

In 1995, FIDIC published a new contract known as the Orange Book. This contract was designed for projects procured on a design and build or turnkey basis.

In 1999, FIDIC publish four contracts as following:

- A. The Construction Contract Designed by the Employer “Red Book”.
- B. The Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, Designed by the Contractor "Yellow Book".
- C. The Conditions of Contract for Engineering Procurement and Construction/Turnkey Projects "Silver Book".
- D. Short Form of Contract for engineering and building work of relatively small capital value "Green Book". Accordingly, the Green Book is suitable for relatively simple or repetitive work, or work that will not require input from specialist sub-contractors.

3. Forms of FIDIC

A. The Red Book:

It was firstly published in 1957 and was designed for the Civil Engineering industry. This form of contract is the most common one throughout the world.

B. The Yellow Book

It was firstly published in 1967 and was designed for the Mechanical and Electrical Engineering sector.

C. The Orange Book

It was firstly published in 1995 and was designed for design and build contract.

D. The Silver Book

It was firstly published in 1999 and was designed for turnkey projects. This contract places significant risks on the contractor. The contractor is also responsible for the majority of the design.

E. The Pink Book

It was firstly published in 2005 and was an adaptation of The Red Book created to fit the purposes of Multilateral Development Banks.

F. The Gold Book

It was firstly published in 2008 and was designed as Design-build and operate contract.

4. Clauses of FIDIC Red Book (2017)

In 2017, FIDIC published Second Editions of the Red, Yellow and Silver Books as updates to the First Editions that released in 1999. (Gould, 2018) addressed some objectives of this update as following:

- A. To enhance project management tools and mechanisms.
- B. To be drafted by engineers experienced in design and construction
- C. To reinforce the role of the “Engineer”.
- D. To achieve a balance risk allocation. The aim here is more reciprocity between the parties.
- E. To achieve clarity, transparency and certainty (sounds like the NEC philosophy).
- F. To reflect current international best practice.
- G. To address issues raised by users over the past 17 years arising out of the use of the 1999 suite.
- H. To incorporate the most recent developments in FIDIC contracts, in particular the Gold Book, which was published in 2008.

The new suite of FIDIC contracts comprises new editions (described by FIDIC as second editions) of the Red, Yellow and Silver Books. Basically, the new versions are very similar to the editions released in 1999.

FIDIC Red book is the most commonly used form of contract through the world specially in construction projects. This form of contract contains the parties as following:

- A. Part 1: General conditions of contract. This part comprises Clauses 1–20 together with the Appendix and Annex for dispute adjudication board agreements.
- B. Part II: Guidance for the preparation of particular conditions.
- C. Part III: Forms – this part includes examples of the letters and agreements which are referred to in the general conditions.

The clause and articles that compromised FIDIC 2017 are as following:

Clause 1 – General Provisions

This clause provides contractual definitions, interpretation and general conditions. It addressed the notices and communication, law and language, priority of documents, contract agreement, delayed drawings or instructions, confidentiality, limitation of liability and contract termination.

Clause 2 - The Employer

This clause pointed the obligation and duties related to the employer. It pointed that the employer shall provide the contractor with the full access to the site without any obstacles and the contractor is entitled to extension of time if the employer failed to provide this access. Moreover, it addressed that the employer shall provide all the required support to the contractor in order to issue the governmental permits and also during the custom procedures. It also pointed the Engineer who represents the employer shall act as per the contract and provide the consultancy and support.

Clause 3 - The Engineer

This clause defined and discussed some points with regard to the Engineer such as the duties, authority level, representatives, delegations, instruction, replacement and meetings.

Clause 4 - The Contractor

This clause pointed the obligation of the contractor, performance security, contractor's representative, contractor's documents, training, co-operation, setting out, health and safety obligations, quality management and compliance verification systems, use of site data, sufficiency of the accepted contract amount, unforeseeable physical conditions, rights of way and facilities, avoidance of interference, access route, transport of goods, contractor's equipment, protection of the environment, temporary utilities, progress reports, security of the site, contractor's operations on site and archaeological and geological findings.

Clause 5 – Subcontracting

This clause pointed the contractual relationships and the other aspects with the subcontractors and the nominated subcontractors

Clause 6 - Staff and Labor

This clause determined the engagement of staff and labor, rates of wages and conditions of labor, recruitment of persons, labor laws, working hours, facilities for staff and labor, health and safety of personnel, contractor's superintendence, disorderly conduct, key personnel, contractor's personnel and contractor's records.

Clause 7 - Plant Materials and Workmanship

This clause addressed the manner of execution, samples, inspection, testing by the contractor, defects and rejection, remedial work, ownership of plant and materials and royalties.

Clause 8 - Commencement Delays and Suspension

This clause addressed the commencement of works, time for completion, programme, advance warning, extension of time for completion, delays caused by authorities, rate of progress, delay damages, employer suspension, consequences of employer suspension, payment for plant and materials after employer suspension, prolonged suspension and resumption of work.

Clause 9 - Tests on Completion

This clause addressed the contractor obligations, delayed tests, retesting and failure to pass tests on completion.

Clause 10 - Employers Taking Over

This clause addressed the taking over of the works and sections, taking over parts, interference with tests on completion and surfaces requiring reinstatement.

Clause 11 – Defects After Taking Over

This clause addressed completion of outstanding work and remedying defects, cost of remedying defects, extension of defects notification period, failure to remedy defects, remedying of defective work off site, further tests after remedying defects, right of access after taking over, contractor to search, performance certificate, unfulfilled obligations and clearance of site.

Clause 12 - Measurement and Valuation

This clause addressed the works to be measured, method of measurement, valuation of the works and omissions.

Clause 13 - Variations and Adjustments

This clause addressed right to vary, value engineering, variation procedure, provisional sums, day work, adjustments for changes in laws and adjustments for changes in cost.

Clause 14 - Contract Price and Payment

This clause addressed the contract price, advance payment, application for interim payment, schedule of payments, plant and materials intended for the works, issue of IPC, payment, delayed payment, release of retention money, statement at completion, final statement, discharge, issue of FPC, cessation of employer's liability and currencies of payment.

Clause 15 - Termination by Employer

This clause addressed the notice to correct, termination for contractor's default, valuation after termination for contractor's default, payment after termination for contractor's default, termination for employer's convenience, valuation after termination for employer's convenience and payment after termination for employer's convenience.

Clause 16 - Termination by Contractor

This clause addressed suspension by contractor, termination by contractor, contractor's obligations after termination and payment after termination by contractor.

Clause 17 - Care of the Works and Indemnities

This clause addressed the responsibility for care of the works, liability for care of the works, intellectual and industrial property rights, indemnities by contractor, indemnities by employer and the shared indemnities.

Clause 18 - Exceptional Events

This clause pointed the exceptional events, notice of an exceptional event, duty to minimize delay, consequences of an exceptional event, optional termination and release from performance under the law.

Clause 19 – Insurance

This clause pointed the General Requirements and the Insurance to be provided by the Contractor.

Clause 20 - Employers and Contractors Claims

This clause discussed the claims and the claims for payment and/or EOT.

Clause 21 - Disputes and Arbitration

This clause discussed Constitution of the DAAB, failure to appoint DAAB Member(s), avoidance of disputes, obtaining DAAB's decision, amicable settlement, arbitration and failure to comply with DAAB's Decision.

5. Main Characteristics of FIDIC Red Book

5.1 Main principles of drafting the contract

(Albulescu, 2014) stated the main principles as following:

- A. The risk is allocated to the party that is able to better bear and control that risk
- B. Recompense and time extension are allowed when uncalculated hindrances/obstacles occur
- C. The conditions of contracts represent a set of good project management techniques and engineering practices
- D. They encourage a less adversarial approach to the relationship between
- E. Contractor and Employer and promote amicable dispute settlement
- F. The conditions of contracts ensure a balance between legal precision and practicability, being compatible with both common and civil law concepts
- G. The Engineer is responsible for the supervision and the monitoring of the works, in strict accordance with the Contract provisions, acting on behalf
- H. of the Employer and being impartial when fair determination is required, though appointed and paid by the Employer.

5.2 The main Parties in FIDIC contract

FIDIC contracts are involved four main parties or entities as following:

- A. The Employer: means the person named as the employer in the Contract Data and the legal successors in title to this person.
- B. The Engineer: means the person named in the Contract Data appointed by the Employer to act as the Engineer for the purposes of the Contract, or any replacement appointed under Sub-Clause 3.6 [Replacement of the Engineer].
- C. The Contractor: means the person(s) named as contractor in the Letter of Tender accepted by the Employer and the legal successors in title of such person(s).

The Contractor's Representative: means the natural person named by the Contractor in the Contract or appointed by the Contractor under Sub-Clause 4.3 [Contractor's Representative], who acts on behalf of the Contractor.

5.3 Priority of documents

According to clause (1.5), the documents forming the Contract are to be taken as mutually explanatory of one another. If there is any conflict, ambiguity or discrepancy, the priority of the documents shall be in accordance with the following sequence:

- a) the Contract Agreement;
- b) the Letter of Acceptance;
- c) the Letter of Tender;
- d) the Particular Conditions Part A – Contract Data;
- e) the Particular Conditions Part B – Special Provisions;
- f) these General Conditions;
- g) the Specification;
- h) the Drawings;
- i) the Schedules;
- j) the JV Undertaking (if the Contractor is a JV); and
- k) any other documents forming part of the Contract.

5.4 Termination clauses

(FIDIC, 2017) addressed the cases of contractually termination in two clauses are:

- A. Clause (15) Termination by Employer: Unless the Contractor remedies the matter described in a Notice given under Sub-Clause 15.2.1 [Notice] within 14 days of receiving the Notice, the Employer may by giving a second Notice to the Contractor to immediately terminate the Contract. The date of termination shall be the date the Contractor receives this second Notice.
- B. Clause (16) Suspension and Termination by Contractor: The Contractor shall be entitled to give a Notice to the Employer of the Contractor's intention to terminate the Contract or, in some defined cases within clause (16.2).

5.5 Site risk and access

In clauses (4.10 and 4.12), FIDIC discussed the risk allocation for site conditions and provided details on the processes that shall be followed in case of claims.

In clause (2.5) FIDIC pointed that the Employer shall have made available to the Contractor for information, before the Base Date (means the date 28 days before the latest date for submission of the Tender), all relevant data in the Employer's possession on the topography of the Site and on sub-surface, hydrological, climatic and environmental conditions at the Site. The Employer shall promptly make available to the Contractor all such data which comes into the Employer's possession after the Base Date.

In clause (4.15), FIDIC stated that the Contractor is deemed satisfied with the access routes in place as at the Base Date and if they are subsequently changed the Contractor can claim an extension of time and Cost.

5.6 Variations

In Clause (13), the variations and Adjustments are addressed deeply.

FIDIC allowed the Engineer to issue any instructions to the Contractor at any time during the project period which may include developing new drawings or modify some related drawings as necessitate for the execution of the required Works. On the other hand, the Contractor shall comply and perform all necessary action to accomplish the new scope.

As per the contract, the Contractor shall be bound by each Variation instructed and shall execute it without any delay unless the Contractor promptly gives a Notice that:

- A. the varied work was Unforeseeable having regard to the scope and nature of the Works described in the Specification;
- B. the Contractor cannot readily obtain the Goods required for the Variation; or
- C. it will adversely affect the Contractor's ability to comply with Sub-Clause 4.8 and/or Sub-Clause 4.18.

5.7 Quality Management and Compliance

Quality Management is discussed in Sub-Clause (4.9) pointing that the Contractor shall prepare and implement a quality management system within 28 days counting from the commencement date of the project. On the other hand, the Engineer may Review the QC system within 14 days And the deemed acceptance is after 21 days.

In case of the contractor failed to prepare or implement the quality management system, the Engineer may issue a Notice.

5.8 Contractor's Programme

In Sub-Clause (8.3), FIDIC pointed that the contractor shall submit an initial programme within (28) days after receiving the Notice stating the commencement date. The contractor shall use a software that acceptable to the Engineer. Once the project started, the contractor shall revise whenever programme to reflect actual progress. The Contract specifies the number of copies to be prepared and submitted by the Contractor to the Employer. Additionally, the contract defines more details about the content of the programme such as logic links between activities and the critical path(s). In Sub-Clause (9.1), there is also now an additional requirement set out to submit a separate testing programme. Clause (8.5) provides the grounds on which the Contractor can claim an extension of time.

5.9 Claims and Dispute Resolution

In clause (20), FIDIC discussed claims, notice of claims and response of Engineer. Both Time and money claims require a Notice of Claim under according to Clause (20.2.1). In simple words, the notice of claim shall be a written communication and to be submitted by the party who is claiming within (28) days of the event of any circumstances, otherwise the claiming party is not entitled to any extension of time or money compensation.

In clause (20.2.2), FIDIC stated that the Engineer shall within (14) days reject in a Notice with reasons. If the Engineer does not give a notice of claim, then the claim is deemed to be valid.

In clause (20.2.4), FIDIC stated that the fully detailed claim includes a detailed description of the event or circumstance, a statement of the contractual and/or other legal basis of a claim, all contemporary records on which the claiming Party relies; and detailed supporting particulars of the amount of additional payment claimed.

In clause (21), FIDIC discussed disputes formation, procedures and notice of dissatisfaction. FIDIC pointed that the Dispute Avoidance/Adjudication Board (DAAB) is compromised from one or three members and all involved parties are deemed to have signed the DAAB member agreements.

5.10 Allocation of Risk:

This Second Edition of the FIDIC Red Book maintain a fair sharing of risks between the different parties within the contract and provides:

- A. greater detail and clarity on the requirements for notices and other communications;
- B. provisions to address Employers' and Contractors' claims treated equally and separated from disputes;
- C. mechanisms for dispute avoidance and
- D. detailed provisions for quality management, and verification of Contractor's contractual compliance

As per clause (2.5), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the

Site, access to the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all matters relevant to the execution of the Works.

As per clause (4.12), “physical conditions” means natural physical conditions and physical obstructions (natural or man-made) and pollutants, which the Contractor encounters at the Site during execution of the Works, including sub-surface and hydrological conditions but excluding climatic conditions at the Site and the effects of those climatic conditions. If the Contractor encounters physical conditions which the Contractor considers to have been Unforeseeable and that will have an adverse effect on the progress and/or increase the Cost of the execution of the Works, the following are some defined procedures.

As per clause (4.13), The Contractor shall bear all costs and charges for special and/or temporary rights-of-way which may be required for the purposes of the Works, including those for access to the Site.

As per clause (17.1), If any loss or damage occurs to the Works, Goods or Contractor’s Documents, during the period when the Contractor is responsible for their care, from any cause whatsoever except as stated in Sub-Clause (17.2) [*Liability for Care of the Works*], the Contractor shall rectify the loss or damage at the Contractor’s risk and cost, so that the Works, Goods or Contractor’s Documents (as the case may be) comply with the Contract.

As per clause (19.1), the Contractor shall effect and maintain all insurances for which the Contractor is responsible with insurers and in terms, both of which shall be subject to consent by the Employer. The Contractor shall insure, in the joint names of the Contractor and the Employer, the Goods and other things brought to Site by the Contractor, against liabilities for death or injury to any person, or loss of or damage to any property and all other insurances required by the Laws.

9. Concluding Summary

FIDIC is widely used contract in construction industry and it has specific characteristics affected the project performance highly and also the relation between the involved parties. Despite that the employer has the upper hand to select the contract and also may edit the draft, each of the involved parties shall study deeply these characteristics to be able to bear any uncertainties beside his obligation and duties.

Acknowledgments

First and foremost, praise and thanks be to Allah the Great and Almighty for enabling me in fulfillment the present work.

I am grateful to Prof. Dr. Mostafa H. Kotb, Prof of Structural Engineering, and Dr. Moustafa Ismail Abu Dief for their scientific supervision, great assistance, sincere guidance, and their endless advice during the accomplishment of the present work.

Finally, I would like to give my deepest thanks to my parents, my wife, and my family for their continued encouragement during my study.

Conflict of Interest

No conflict of interest

REFERENCES

AACE International. (2018). *AACE® International Recommended Practice No. 10S-90, COST ENGINEERING TERMINOLOGY*. AACE International.

Allan Ashworth. (2015). *Contractual Procedures in the Construction Industry*. Routledge.

Billows, D. (2011). *Project Qualitative Risk Analysis*. The Hampton Group, Inc.

Dale Cooper, Chris Chapman . (1987). *Risk Analysis for Large Projects: Models, Methods, and Cases*. Wiley; 1 edition (April 1987).

FIDIC. (2017). *FIDIC® Conditions of Contract for CONSTRUCTION FOR BUILDING AND ENGINEERING WORKS DESIGNED BY THE EMPLOYER* (Second Edition 2017 ed.).

G. H. Bateman. (2009). *Proceedings of the Institution of Civil Engineers - Management, Procurement and Law* (Vol. 162). ICE Virtual Library. doi:
<https://doi.org/10.1680/mpal.2009.162.4.169>

Geoff Powell. (2016). *Construction Contract Preparation and Management: From concept to completion*. Palgrave.

Gould, N. (2018). *The New 2017 FIDIC Red, Yellow and Silver Books*. Society of Construction Law. Retrieved from https://www.fenwickelliott.com/sites/default/files/scl_-_the_new_2017_fidic_red_yellow_and_silver_books_with_scl_logo-1.pdf

Institution of Civil Engineers. (2016). *Civil Engineering Procedure*. ICE Publishing. doi:
<https://doi.org/10.1680/cep.60692.073>

JG PERRY, RW HAYES. (1985). *RISK AND ITS MANAGEMENT IN CONSTRUCTION PROJECTS* (Vol. Volum 78 Issue 3). Retrieved from <https://doi.org/10.1680/iicep.1985.859>
Leroy Doris, Neil Opfer, CCP CEP PSP, Sean T. Regan, CCP CEP MRICS, Ted Turner. (2013). *Decision and Risk Management Professional™ (DRMP)™* (First Edition ed.). (C. C. Sean T. Regan, Ed.) AACE® International.

Martin Loosemore, John Raftery, Charles Reilly, David Higgon. (2006). *Risk Management in Projects* (Second Edition ed.). Taylor & Francis.

PMI. (2009). *Practice Standard for Project Risk Management*. Project Management Institute.

PMI. (2017). *PMBOK® Guide – Sixth Edition*. PMI.

Seung H. Han and James E. Diekmann. (2001). *Approaches for Making Risk-Based Go/No-Go Decision for International Projects* (Vols. Vol. 127, Issue 4 (August 2001)). Journal of Construction Engineering and Management.

Tah, J.H.M., Thorpe, A., and McCaffer, R. (1996). *Risk interdependencies and natural language computationsk Journal of Engineering, Construction and Architectural Management*.

The Joint Contracts Tribunal Limited. (2017). *Deciding on the appropriate JCT*. Thomson Reuters (Professional) UK Limited.

U.S. Office of the Secretary of Defense . (2006). *Risk Management Guide for DOD Acquisition* (Sixth Edition ed., Vol. Version 1.0). U.S. Department of Defense.

William R. Anson. (1939). *Principles Of The Law Of Contracts*. William R. Anson.

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