

Change Order Process Behind of FIDIC, AIA and KIK Standard Contract Documents

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Abstract

During construction, the reasons such as unforeseen conditions, changes that are instructed by the owner in the scope of the Work, failure of the drawings and technical specifications indicated in the contract documents can cause the change order on the construction process. So; determining whether the change is necessary, indicating the causes of the changes, preparing the additional information, revision drawings, specifications and prices properly become important in this way. Especially to avoid delays and to minimize disputes timely proceeding and coordination between participants and communication process are fundamental components. The international standard contract forms such as AIA and FIDIC have described the change order and its processes in detail. In this study; the standard contract forms used in Turkish public biddings which is the name of KIK will be examined by comparing FIDIC and AIA standard contract forms with the provisions of change order.

Keywords: change order, Turkish construction sector, AIA, FIDIC, KIK standard contract documents.

1. Introduction

The reasons as encountered unforeseen conditions resulted from different demands and uncertainties furthermore including a lot of participants inside its structural property cause that construction sector is a more risky and complex sector when it is compared to other sectors. Therefore, various organizations and institutions have published standard contract documents to determine the construction process, to be able to solve encountered problems in an easily way during this term, to determine the distribution of risks through describing the duties, authority and the responsibilities of the participants and to clarify the process control and monitoring on a certain standardization.

Today; primarily contract documents widely used in international construction projects are standard contract forms published by AIA (American Institute of Architects) and FIDIC (International Federation of Consulting Engineers). On the other hand, in Turkey, standard contract documents named as KIK (Public Procurement Law) is used for the construction projects issued by public procurement authority. However, during the implementation of construction projects, the factors such as unforeseen conditions in the design phase, changes in requirements or additional requests of the owner can cause some changes in the scope of the projects and construction contracts. Generally ‘changes in construction projects’ are defined as revisions or modifications upon the qualities or quantities that agreed within the contractual drawings and specifications. These changes can occur as omission or addition of some construction materials, revisions in projects, in plant and machinery requirements or in technical specifications stated in contract documents.. As it is known, the main objective in the process of construction is completing the Project within the targets of time, cost and quality conditions that earned at the beginning. But during construction, it is possible to encounter some changes which can be effective on these three components, upon some of them, all of them or sometimes none of them. So; determining of contract changes, their process, application, instructions and provisions become important for the realization of time, cost and quality targets.

In international construction contracts such as FIDIC and AIA, changes in contract are defined as under the title of ‘variation (FIDIC) and ‘change order’ (AIA). But in Turkish Public Legislation, contract changes are not as certainly defined as FIDIC or AIA, in the scope of KIK that is the standard contract forms used in Turkish construction sector. So; in the context of this study, the basic aim is determining decencies, failures, similarities and as a result making recommendations for KIK by analyzing related provisions about contract changes in FIDIC and AIA standard contract forms.

2. Change order process in construction contracts and its position in contract administration

In construction projects, it is important that, work completion must be reach on proposed cost, time and quality. In the scope of this aim, contract documents should determine all of these process’ responsibilities, risks, limits, control, actually the procedure of the process. So, prepared documents, general conditions or specifications should be prepared as be able to response to all of the possible problems during application. However, it is impossible that there will be no modification during

building a project. Because construction work is so complicated thing because of its physical qualities with lots of various participants. So, contract documents must also define the possible contract changes. These changes can affect the contract sum or time, design requirements as in partial or completely. Therefore provisions and instructions of changes should clearly de expressed in contract documents. As it is defined in introduction above, in international construction contracts such as FIDIC and AIA, changes in contract are defined as under the title of ‘variation (FIDIC) and ‘change order’ (AIA).

According to AIA contract documents, the document of A201 General Conditions changer order is defined as a written instrument; Prepared by the Architect as the agent of the Owner, signed between the Architect and the Contractor, stating the participants’ agreement upon ,changes in the work, changes in contract sum, if it is necessary, changes in contract time, if it is necessary or both of them (CSI, 2005). From this definition; project revisions, omissions or additions that affect the scope, duration or budget of the construction work are executed by the instruction of change order after signing the contracts. The emergence of change orders may be eventuate in two ways as sourced by the owner / architect or by the contractor:

- a) Requests for changes can directly come from the Owner or alternatively the Architect can submit a proposal to the Owner in the scope of project or contract.
- b) On the other hand, if the contractor request a notice by the architect / engineer as a result of causes such as unforeseen conditions, design and contract documents’ defeciencied, problems or questions of the subcontractors and suppliers during construction phase. This process may cause the change order as a result (Levin, 1998).

2.1 Causes of change order

Change orders arise by unforeseen conditions during construction process, deficiency of the drawings and technical specifications described in the contract documents, scope change (additional or enhancement) by owner, technological changes, financial changes, changes in projected requirements, constructive acceleration, force majeure (O’Brien, 1998).

In addition the causes listed above; changes in Legislation after the bidding, comments of the regulators of public law, the end of manufacturing of a specific material in the BOQ list, the emergence of new information about designated materials in the BOQ list can be classified as the causes of change orders during construction process.

During the approval process of change order, it is necessary that to be indicated the causes of changes correctly, determined the requirement of changes and prepared additional information, changing drawings, specifications and price revisions in detail. Particularly, to avoid delays and minimize disputes between participants, timely coordination and communication becomes important during construction process. Management of changes in the work is a real test for success of contract

administration (Gould, Joyce, 2000). In this context, it is once again indicated that a correct contract administration is so important for executing construction contracts once again.

2.2 Change order process

During construction process, before preparation of change order, it is envisaged that the determination of the problem, requirements, causes of the changes and solutions, stating cost factors, additional unit prices, effects of these changes on contract sum and time, coordination between architect/engineer and the contractor in the detection of this process.

Published by The Project Resource Manual (PRM 2005) and served basis to international contracts such as FIDIC and AIA, the change order process is mentioned in Figure 1.

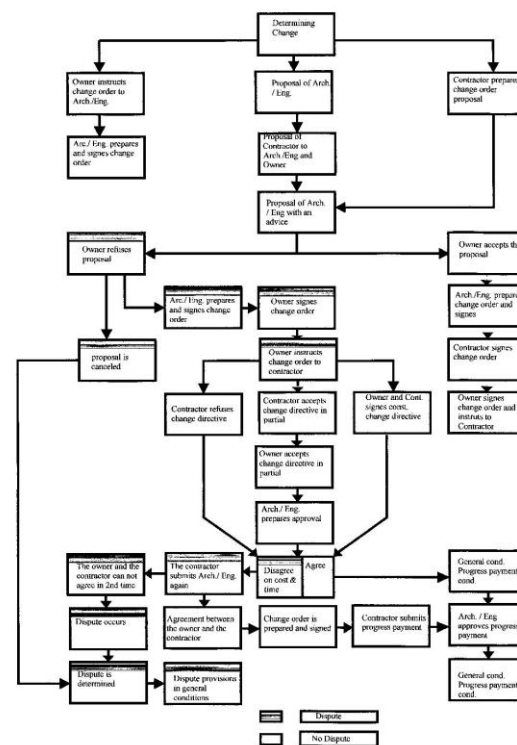


Figure 1. Change Order Process (CSI,2005),(Tasoluk, 2006)

3. Change order process in standard contract forms

3.1 Change order process in FIDIC standard contract forms

FIDIC contract forms are classified on the basis of two main components as it is stated between the owner and contractor. These are to whom are the contract documents prepared / who is the design responsible and to whom are the risks allocated in case of increasing/ decreasing of the quantities during construction work. In October 1999, FIDIC has published a set consisting of 4 standard contract forms:

- 1) (1999 Red Book – The Construction Contract (Conditions of Contract for Building and Engineering Works, Designed by the Employer)
- 2) (1999 Yellow Book – The Plant and Design – Build Contract (Conditions of Contract for Electrical and Mechanical Plant, and for Building and Engineering Works, Designed by the Contractor)
- 3) (1999 Silver Book - (Conditions of Contract for EPC (Engineering, Procurement and Construction) Turnkey Projects)
- 4) (1999 Green Book – The Short Form of Contract) (FIDIC,1999) (Jenkinson,2008) (Bunni, 2005)

In FIDIC contract forms change order process does not vary according to the contract forms and contract types. In FIDIC Red Book standard form; contract provisions related to change order application have been determined in Clause 13 ‘Variations and Adjustments’ as a part of General Conditions and in this study the discussions are collected around this clause.

The provisions of this clause are grouped as Clause 13.1 Right to Vary, Clause 13.2 Value Engineering, Clause 13.3 Variation Procedure, Clause 13.7 Adjustments Changes in Legislation, Clause 13.8 Adjustments for Changes in Cost.

According to FIDIC Red Book, Clause 13.1; the Engineer is the responsible for controlling and monitoring the construction process on behalf of the owner. So the engineer has rights to notify necessary changes about the quality or quantity of any work to the contractor. Clause 13.1 defines the meaning of change under 6 different headings:

- a) Changes to the quantities of any item of work included in the contract (however, such changes do not necessarily constitute a variation)
- b) Changes to the quality and other characteristics of any item of work
- c) Changes to the levels, positions and/or dimensions of any part of the works

d) Omission of any work unless it is to be carried out by others

e) Any additional work, plant, materials or services necessary for the permanent Works, including any associated tests on completion, boreholes and other testing and other testing and exploratory work

f) Changes to the sequence or timing of the execution of the works. (FIDIC,1999)

Change (variation) Order process is defined in the scope of Clause 13.3 'Variation Procedure', in FIDIC Red Book. According to this article, the Engineer can demand a proposal from the contractor before issuing the change order. The Contractor shall instruct the proposal and after that the engineer shall, as soon as practicable after receiving such proposal, respond with approval, disapproval or comments by making necessary negotiations with the owner.

3.2 Change order process in AIA standard contract forms

AIA has published a standard document as the name of AIA 201 that contains the agreements of the architect, the owner and the contractor and defines the general conditions of executing construction contracts. However, when considering the special conditions that affect a construction project (construction type, project type, the user / owner requests, etc.), general conditions may be insufficient alone. In this case, supplementary conditions are required according to the type of construction projects. AIA contract forms do not include standard supplementary conditions, but there are some methods that may help to write these conditions in the context. AIA contract documents classify the contract types as lump sum contracts and guaranteed maximum price cost + fee contracts according to the payment conditions.

In AIA contract forms, change order application does not vary according to the contract types and in both cases it is based on A201 General Conditions. Within the scope of this thesis, the document of AIA 201-2007 General Conditions is based on reviewing the change order provisions in the scope of AIA contract documents.

In the context of A201 – General Conditions-2007, the provisions of changes in the work are defined under the Article 7 around following headings: Article 7 –Changes in the Work, Article 7.1 –General, Article 7.2 – Change Orders, Article 7.3 – Construction Change Directives, Article 7.4 – Minor Changes in the Work.

As understood from related contract provisions, in AIA contract documents, change order applications are separated into 3 basic parts as: Change orders, Construction change directives, Orders for the minor changes in the work.

Article 7.2 Change order: According to the AIA contract documents; change order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect; stating their agreement upon changes in the work, changes in the contract sum or contract time

(<http://www.aia.org>), (AIA G701-2000). These changes either may have been originated by the Owner or can be the contractor's proposal. If the disputes are stated as a result of negotiations, the Architect works as a moderator. As the reconciliation is provided, the change order instruction is published by the Architect.

Article 7.3 Construction change directive: Construction change directive is a written order prepared by the Architect and signed by the Owner and the Architect, directing a change in the Work prior to agreement on adjustment, if any, in the contract sum or contract time, both. (<http://www.aia.org>), (AIA G701-2000). The Owner has the right to notice the changes to the Contractor by the construction change directives in the scope of contract provisions. The owner uses this right when a change order cannot be obtained due to limited time or disagreement between the parties with regard to associated changes in contract sum or contract time. Construction change directives may be effective on the contract sum or contract time, both or none of them. But change orders certainly impact the contract sum or contract time or both of them. When the Contractor gets the change order directive, he can perform changes without any claim or he can apply to the Architect for related issues. If an agreement is stated upon the changes in contract sum or time regarding to the Contractor's demand, change orders directive is issued as a change order.

Article 7.4 Minor changes in the work: Minor changes in the Work do not involve any adjustment in the contract sum or extension of the contract time and they are not inconsistent with the intent of the contract documents. The architect has the authority to order minor changes so the agreement of the Owner or Contractor is not necessary for these changes.

3.3 Change order application in KIK (Public Procurement Law)

In response to standard contract documents used in international construction contracts; in Turkish construction sector, standard contract forms are stated in the context of KIK (Public Procurement Law) No.4734 that is used for the construction works 'under the control of public' as it is accepted on 04.01.2022 and published on 22/01/2002 in the Official Gazette No.24648

Principles and procedures related to the regulation of the contracts are determined in KISK (Public Procurement Contracts Law) No. 4735 in accordance with KIK (Public Procurement Law). In the context of KIK Legislation, Regulation of the Biddings of Construction Works Application (YIUY) has been published for determining the principles and procedures of construction biddings' in accordance with KIK and KISK. General conditions of the contracts related to the Public procurement Legislation are determined in the document named as General Conditions of Construction Works (YIGS) which is the annex of this regulation.

In the scope of public procurement contracts, there is no title as the name of 'Change Order' as stated in FIDIC or AIA contract documents. However changes in the Work are included in the scope of law within the clauses listed below:

a) KISK Clause 15 - Changes in the contract

b) KISK Clause 24 - 'Additional works, decreasing and liquidation of the works in the scope of the contract' that is published under the title of 'Changes in the contract, Transfer and Termination of the contract'

c) YIGS Clause 21 - Additional works, decreasing and liquidation of the works in the scope of the contract

d) YIGS Clause 22 – Determining contract price of additional works

YIGS Clause 29 –Duration of the work and time extension

a) KISK - Clause 15: According to this clause, it is placed as a condition that the contract sum will not change and the mutual agreement must be obtained.

b – c) KISK – Clause 24 and YIGS- Clause 21: Changes in the work are defined as the same meaning in KISK Clause 24 and YIGS Clause 21.

In tenders of public construction Works, as understood from the relevant laws' clause; unit price and lump sum turnkey contracts are widely used.

- Change order process in lump sum turnkey contracts: In this type of contract; in the rate of up to 10% of the contract price within; related changes except time extension under the provisions of the contract and bidding documents can be made to the same contractor.

- Change order process in unit price contracts: In unit price contracts; in the rate of up to 20% contract price within; related changes except time extension under the provisions of the contract and bidding documents can be made to the same contractor.

The Council of Ministers can raise this rate up to %40 in accordance with the contract.

d) YIGS - Clause 22: Calculating of the price of additional Works, consequently changes in the contract sum are defined within the scope of this clause.

e) YIGS – Clause 29: According to the article YİGŞ 29; situations and procedures of time extension are defined as determined below:

In case of force majeure and/or administrative decisions cause the delays in work, the construction duration is extended partially or entirely within the consideration of the responsibility does not belong to the contractor (<http://www.kik.gov.tr>).

As it is understood from the provisions of changes in contract sum and time, it is possible to say that in the scope of KIK, owner (administration) has much more effectiveness than the contractor on controlling and monitoring changes in the work.

4. Comparing change order process behind FIDIC, AIA and KIK standard contract documents

In the scope of the study; the change order clauses in KIK standard contract forms are analysed based on the provisions and applications of AIA and FIDIC standard contract forms and it is identified that KIK standard contract clauses involve lots of deficiency regarding this issue. Identification of these deficiencies and the consequences are listed below.

a) Change order clauses in the scope of contract: The change order clauses stated in KIK contract documents have many defectives concerning with the provisions as defining the change, the change order process and the application of instructions when it is compared the related clauses stated in FIDIC and AIA standard forms.

This situation complicates the resolution of potential disputes between the Contractor and the Owner in a fair way.

b) Using of standard forms: In the context of KIK; not involving any recording systems regarding to the indemnification and finalization contract changes and participants' views during the dispute resolution process unlike the FIDIC and AIA standard forms, complicate the agreement based upon a common contracting language and cause prolonging the treaty process unnecessarily.

c) Clearness of the contract language: The change order application is grouped under a single article in the context of general conditions in AIA and similarly FIDIC contract documents. However; under the provisions of KIK, related articles are determined in five different laws and specifications. This situation makes executing of the contract difficult through complicating the clearness of contract language by causing a large number of comments. But contracts by definition must be open, understandable, clearly and should not cause more than one interpretation.

d) Change order process according to the contract types: As it is indicated under previous parts, KIK contract forms divide the construction contracts into 2 separate groups on the basis of lump sum and unit price contracts. KIK standard provisions limit the cost increases as a result of changes in the Work by separating them according to the contract types unlike the FIDIC and AIA contract documents. So there occurs a handicap for the settlement of the standardization of general conditions in the context of contract.

e) Resource of change order: In the scope of FIDIC and AIA standard contract provisions, it is identified that how the change order process will work if the contract changes are sourced by the owner's or contractor's claims and similar steps are followed for each contract type. On the other hand; in the provisions of KIK, it is considered that the changes in the work mostly occur as a result of owner's demand and contractors do not have any claim rights related this issue.

f) Responsible people for monitoring the change order process: In all three form of the contract; a responsible is assigned for monitoring and controlling the contract provisions on behalf of the Owner.

However; in KIK contract forms, change order provisions are not determined in a specific title as expressed in FIDIC and AIA, the authority and the responsibilities of the person who will monitor and control the process are not defined clearly. Within this framework, based on these 6 items mentioned above, the change order application's provisions, process and impacts are examined in AIA, FIDIC and KIK standard contract forms. In the schedule below it is summarized the similarities and the differences of these three forms.

Table 1: Comparing change order process behind FIDIC, AIA and KIK standard contract documents

	<i>TOPICS</i>	<i>FIDIC RED BOOK</i>	<i>AIA A201</i>	<i>KIK</i>
1	<i>Change order clauses in the scope of contract</i>	<i>Clause13* 'Variations and Adjustments'</i>	<i>Madde 7* 'Changes in the Work'</i>	<i>NO CLAUSE</i>
2	<i>Using of standart forms</i>	+	+	<i>NO STANDART FORM</i>
3	<i>Clearness of the contract language</i>	+	+	<i>DEFICIENT</i>
4	<i>Change order process according to the contract types</i>	<i>SIMILAR</i>	<i>SIMILAR</i>	<i>DIFFERENS IN APPLICATION</i>
	<i>Lump Sum Contracts</i>	+	+	+
	<i>Cost + Fee Contracts</i>	+	+	-
	<i>Re-measurement Contracts</i>	+	-	-
	<i>Unit Price Contracts</i>	-	-	+
5	<i>Resource of change order</i>			
	<i>By Owner</i>	+	+	+
	<i>By Contractor</i>	+	+	<i>NO CLAUSE</i>
6	<i>Responsibles for monitoring the change order process</i>			
	<i>Architect / Contract Administrator</i>	-	+	-
	<i>Engineer</i>	+	-	-
	<i>Construction Control Officer</i>	-	-	<i>*RESPONSIBLE FOR ONLY TECHNICAL CONTROL, NOT ADMINISTRATIVE</i>

**Remark:*

+ : Clauses stated in related contract form.

- : Clauses not stated in related contract form.

4.1 Conclusions and recommendations on the scope of change order application operating in KIK standard documents

It is possible to classify the solutions for providing a healthy operating system of change order application and resolving deficiencies related provisions in KIK contract documents within the scope of the items mentioned above:

1. A clear definition should be stated in the context of the contract, under a single provision through the definition as 'Changes in the scope of the Work', not in many different contract or specification clauses.
2. In the context of KIK standard contract documents, standard forms absolutely should be used for the instructions of changes to the related responsible people, as it is seemed in AIA and FIDIC. These forms should be recorded by classifying according to the types of changes, for instance the changes that impact the contract sum or contract time or not. Thus it will make easy following the process.
3. The same definitions should be included in the documents which may be references to each other for relevant provisions as KISK and YİĞŞ for the availability of easily understood of contract language. The current situation causes confusion and uncertainty how the process will be operated through which related contract or specification clause will be used as the basis of the application. Therefore, all relevant provisions should be occurred in the frame of a single document through using open, clear and concise expressions.
4. Various change order applications which are separated according to the contract types, create an obstacle to stating the general conditions for the signed contracts unlike the standard forms as AIA and FIDIC. Contract changes are an issue that may directly affect the process of construction, so it must be certainly stated in the context of general conditions of the contract regardless of differences. If any demand is occurred, the differences should be expressed in the scope of supplemental conditions.
5. For providing a fair risk distribution between the participants through defining the authority and the responsibilities clearly, it must be considered that the contractor has the rights for demanding the change order as the owner has, but in KIK standard forms a disparity is created by stating the changes mostly can be sourced by the owner. Therefore, contractor claims should be occurred in the relevant conditions and the provisions.
6. FIDIC, AIA and KIK standard contract forms define the responsible that has the tasks of following the change order process on behalf of the Owner with different names, respectively engineers / architects or building control officer. But in the scope of KIK, the duties of relevant responsible must be expressed under the provisions of change order process, as it is occurred in AIA and FIDIC forms.

5. Conclusion

Finally, the change order application stated in KIK standard contract documents, which is the conduct of public procurement in Turkey, are examined by comparing relevant provisions in FIDIC and AIA standard forms widely used as the international construction contract forms in many countries today. As a result, it is determined that KIK contract forms involve lots of failures and deficiencies when it is compared to FIDIC and AIA, in the scope of change order. By the way; resolutions and recommendations are stated for related identified defects executing of KIK standard forms.

It can be said that elimination of these lacks will be helpful for stating the coordination more successfully between the participants in the Turkish construction sector, ensuring communication, preventing delays, minimizing disagreements and completing the works in the optimum time and price conditions. In this context, it is once more emphasized that an accurate contract management is so fundamental item for executing the construction contracts regularly.

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