Basic Study on Term of Warranty Liability for Water Supply, Drainage, and Sanitation Arrangement Work Defect in Apartment Building

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Abstract. The defect lawsuit of the apartment which is the representative residential style of Korea continues and becomes a social problem. In the defect lawsuit, the term of warranty liability is a period that can demand the defect repair according to defect occurrence, and the exclusion period of the exercise of rights. However, the term of warranty liability stipulated in relevant laws such as Enforcement Decree of the Housing Act is being changed arbitrarily, without any established grounds. Therefore, a reasonable standard for establishing the term of warranty liability is required. In this study, the defects of water supply, drainage and sanitation arrangement work were studied. As a result of analyzing the number of defect occurrence in the apartment, it was shown that the defects in water supply, drainage and sanitation arrangement work occurred more than 80% in the 1st ~ 2nd year after completion. However, the occurrence of defects from the 3rd year was extremely slight. On the other hand, it was confirmed that the defect occurrence continued until fairly late point of time as the end point of time of the defects was in the 7th to 9th years.

1. Introduction

In Korea, the dominant forms of housing are chiefly apartment houses, especially apartments (more than five stories). These apartments are very popular in Korea because they are more advantageous than existing houses in terms of convenience, maintenance cost, safety, etc [1]. However, Korean apartments are expensive among housing, and the disputes surrounding them are accelerating due to the upgraded image by the subject of the business and the improvement of the divided owner’s eye level [2]. This dispute is expanding into lawsuit, which is pointed out as a big social problem, and this is called a defect lawsuit.

The term of warranty liability for apartment stated in the Housing Act [3] is exclusion period of the exercise of rights as the period that can demand the defect repair according to defect occurrence. At the same time, it is a standard for preventive and smooth maintenance of apartment. In the case of a defect lawsuit, it is very important because it judges whether or not to request defect repair according to the term of warranty liability [4]. However, there is no clear ground for enacting the term of warranty liability. Although it was arbitrarily stipulated in the first Regulations on the Management of Apartment Buildings [5], the clauses were added, deleted, and the term was changed after the law revisions were carried out several times. Recently, with the revision of Apartment House Management Law [6], the term of warranty liability was changed again, but this was still done arbitrarily without any clear ground.
1.1. Purpose
In order to smoothly resolve defect lawsuit surrounding the apartment, objective and reasonable standard for establishing the term of warranty liability is required. To do this, it is important to provide an objective basis and interpret it logically. This study is the basis for reasonable establishment of the term of warranty liability.

1.2. Scope and Method
This study investigated the defects of water supply, drainage and sanitation arrangement work among various defects occurring in apartment housing. The water supply, drainage and sanitation arrangement work are the second most defects in the number of defect occurrence, and the most construction type of defect occurrence among the facility work of apartment housing.
In this study, we investigated the number of defects occurring in apartment housing in Korea. In addition, we examined the occurrence trends of defects in 18 construction types under the Housing Act [3] by the term of warranty liability.

2. Literature Review

2.1 Definition on Defect and Term of Warranty Liability
The defects of water supply, drainage and sanitation arrangement work in apartment buildings are caused by pipe leaks, poor drainage within households, defective pipes, poor fixation and dropouts of sanitary fixtures, etc. Water supply, drainage and sanitation arrangement work are mostly water leakage or clogging in piping. Therefore, it is an important defect because it directly affects the life of the apartment residents. Briefly in terms of the safety, function, and aesthetics, it is mainly related to functional matters. On the other hand, there is little direct influence in terms of safety or aesthetics, but if defects are neglected, it is likely to expand as safety and aesthetic problem.

2.2 History of Law Revision and Problem
The types and term of warranty liability of water supply, drainage and sanitation arrangement work have been changed several times according to the enactment and revision of relevant laws and regulations. Typical examples are as follows.
First, it was the Regulations on the Management of Apartment Buildings [7] in 1979 that first specified the defect repair period for major parts by construction type in relation to defect repair.
Second, it was the revision of the Management of Apartment Buildings in 1981 [5] that the term of warranty liability was first specified. However, there are no ground materials and purpose explanations for establishing the term of warranty liability. At the time when the relevant regulations were enacted, it seemed that it was not a topic because it was the beginning of the construction of apartment in Korea and there was no defect dispute. However, since the 2000s after more than 20 years later, the term of warranty liability has played a role as important determining basis of defect dispute. Through this, it can be confirmed that how necessary sufficient consultation on legal provisions is, and how important judgment considering the future impacts is. Meanwhile, at that time, there were five detailed construction types of water supply, drainage and sanitation arrangement work. For the term of warranty liability of each detailed construction type, water supply facilities, hot water supply facilities and drainage ventilation facilities were 2 years, and sanitation arrangement facilities and heat reserving work were 1 year.
Third, the provisions related to the period of liability for collateralized liability did not change much in 1981, even after several revisions of relevant laws and regulations. However, as the law was amended in 1998, the relevant contents were all transferred to the cooperative housing control ordinance [8]. However, there was no change in contents. In 2003, the apartment house control order was abolished and related contents were relocated to the Enforcement Decree of the Housing Act [9].
Fourth, with the revision of the Enforcement Decree of the Housing Act in 2007, the existing term of warranty liability extended from one to three years, to one to four years [10]. At the same time, special
arrangement work was added to the water supply, drainage and sanitation arrangement work and the term of warranty liability was adjusted to two years in a lump. Especially, the revision in 2007 added a lot of major construction types of apartment, and the term of warranty liability was most extended. The reason for the revision of the law said that the extension of the term of warranty liability was caused by protection of tenants, development of construction-related technology, etc. However, in the case of revision of the law in Korea, no additional evidence was confirmed even in the official gazette which has announced the reason for the revision or the purpose of the revision, etc [11].

3. Review on Occurrence of Defect

3.1 Outline

As previously discussed, it was confirmed that there was no ground for establishing the term of warranty liability in the laws and regulations related to apartment. We intended to investigate the actual status of defects in apartment, and tried to identify to what extent defects occur, and at which time defects are concentrated, etc.

For this study, we investigated the number of defects that occurred in 177 apartment complexes constructed by 12 construction companies. The total size of each apartment complex was 125,816 households, and construction was completed from 2002 to 2011. It was difficult to identify other information such as the number of houses, the number of floors, and the area of households, etc. Therefore, it is noted that the analysis of these matters was excluded in this study.

3.2 Occurrence of Total Defect

A total of 1,449,745 defects were found in the apartment where the defects occurred. Based on the number of defect occurrence, the first place was finish work of 42.54%, and the second place was supply, drainage and sanitation arrangement work of 13.72%. The third place was window and door work of 12.66%, and the fourth place was wood work of 8.65%. The fifth place was miscellaneous work of 7.41% and the sixth was electricity and electric power facility work of 7.20%. The other defects occurred in 12 construction types were insignificant compared to those of the above 6 construction types (Figure 1).

3.3 Occurrence of Water Supply, Drainage, and Sanitation Arrangement Work Defect

The details of defects of water supply, drainage and sanitation arrangement work, which are direct subjects of this study, are as follow by detailed construction type.

Examined from the detailed types with the large number of defect occurrence, it appeared in order of drainage and ventilation work, sanitation arrangement work, water supply work, hot water supply work, and special arrangement work. Drainage and ventilation work, and sanitation arrangement work, accounted for 45% and 34%, respectively. On the other hand, special work was only 46 cases, and the defects of steel and heat reserving work did not occur at all (Figure 2).

Figure 1. Whole status of occurred defect

Figure 2. Status of water supply, drainage, and sanitation arrangement work defect
4. Occurrence Trend of Water Supply, Drainage, and Sanitation Arrangement Work Defect

In this chapter, we analyzed the cumulative trends of the number of defect occurrence by each construction type of water supply, drainage and sanitation arrangement work. The heat reserving work and special works with insignificant defects were excluded from this analysis.

4.1 Water Supply Work Defect

The occurrence of water supply work defect was 57% in the 1st year, and occurrence of cumulative defects was 83% in the 2nd year. It reached 95% in the 3rd year, increased 99% in the 5th year, and the occurrence of defect ended with 100% in the 9th year (Figure 3).

4.2 Hot Water Supply Work Defect

The occurrence of hot water supply work defect was 57% in the 1st year and cumulative defects up to 96% in the 2nd year. It was 99% in the 3rd year, and the defect occurrence ended with 100% in the 7th year (Figure 4).

4.3 Drainage and Ventilation Work Defect

The occurrence of drainage and ventilation work defect was 59% in the 1st year and accumulated defect 86% in the 2nd year. It was 96% in the 3rd year, 99% in the 4th year, and the occurrence of defect ended in the 8th year (Figure 5).

4.4 Sanitation Arrangement Work Defect

The occurrence of sanitation arrangement work defect was 63% in the 1st year. It was 93% until the 2nd year after that, and 99% the 4th year, respectively, and the occurrence of defect ended in the 9th year (Figure 6).

4.5 Result and Implication

The results of analyzing the trend of the number of defect occurred in the water supply, drainage and sanitation arrangement work of the apartment house are summarized as follows. As a result of
checking the number of defect occurrence in the 1st and 2nd years, more than 80% of defects were concentrated in water supply work and drainage and ventilation work. On the other hand, in the case of hot water supply work and sanitary arrangement work, more than 90% of defects were concentrated. Through this, it can be seen that the occurrence of defect of the hot water supply work and the sanitary arrangement work were concentrated in the early stage.

Examining the overall trends suggests the following points. It can be seen that the defects of water supply, drainage and sanitation arrangement work are concentrated more than 80% in the first and second year. And the defects from the third year were extremely slight. On the other hand, it was confirmed that the point of time when the occurrence of defect ended was 7 ~ 9th year and the occurrence of defect continued until the considerably late time.

5. Conclusion

The lawsuits surrounding the defects of the apartment, which is the representative residential style of Korea, continues and becomes a social problem. In the defect lawsuit, the term of warranty liability is a period that can demand the defect repair according to defect occurrence, and the exclusion period of the exercise of rights. However, this important the term of warranty liability has been arbitrarily stipulated without establishing grounds and continued for about 40 years. Now that many apartments have been built and become the home of the nation, the term of warranty liability should be re-established on a reasonable basis through objective data and scientific analysis.

This study was conducted to investigate the defects of water supply, drainage and sanitation arrangement work among various defects occurring in apartment. As a result of the analysis, it was shown that the defects in water supply, drainage and sanitation arrangement work occurred more than 80% in the 1st ~ 2nd year after completion. However, the occurrence of defects from the 3rd year was extremely slight. On the other hand, it was confirmed that the defect occurrence continued until fairly late point of time as the end point of time of the defects was in the 7th to 9th years.

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7. References

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