

# Basic Study on Term of Warranty Liability for Miscellaneous Work

**Junmo Park <sup>1</sup>, Deokseok Seo <sup>2</sup>**

<sup>1</sup> Kyungsan Engineering Co., Ltd., Seochoda-ro Seocho-gu, Seoul, Korea

<sup>2</sup> Halla University, Halladae-gil, Wonju, Gangwon, Korea

seodk@halla.ac.kr

**Abstract:** In Korea, defect lawsuits for apartment buildings, the most common housing style, are becoming a social issue. Among various issues in defect lawsuits, warranty of liability is very important. This is because the business entities are responsible for assuring the maintenance of the defects during this period, and at the same time, the residents can request fair compensation for the defects. However, provisions on the term of warranty of liability provided in the current Housing Act were made 40 years ago when the social basis were weak. Thus, it does not have any rational foundation. In order to improve these problems, basic research on the warranty of liability by major types of apartments is needed. In this study, the defect cases for miscellaneous works of apartments were examined and analyzed. Miscellaneous work consists of ondol work, kitchenware work, indoor and outdoor equipment work, and metallic work. Among them, kitchenware work and metallic work showed a lot of defects. On the other hand, warranty of liability covers up to 10 years in total. The defect occurrence for the entire miscellaneous work showed a tendency to concentrate in the first and the second year. It is the third year that the total defects reach 95%, and the fourth year that exceeds 99%. The ondol work, indoor and outdoor equipment work and metallic work had this tendency. On the other hand, for kitchenware work, it is the third year that the defect occurrence reaches 99%, and it implies that the defect tends to occur more quickly than in other detailed works.

## 1. Introduction

In Korea, as urbanization rapidly progressed in the 1980s and 1990s, collective housing became a universal type of residence. Particularly, the apartment type, which means five or more stories, is the main type of residence. The apartments in Korea account for more than half of all housings and 59% as of 2010 [1]. These apartments in Korea are excellent in convenience because they have various social infrastructures that detached housings are not equipped with. Because of this, many Koreans are hoping to live in apartments [2].

However, since the 2000s, Koreans' awareness of housing has changed dramatically, and they have recognized housing as an important asset, not simply a residential space. As a result, the residents residing in apartments are maintaining a safe and pleasant apartment, while paying great attention to preserving asset value as real estate [3]. However, a variety of problems for apartments occur, which is a social problem, and among them, lawsuits against the defects of apartments are increasing rapidly.



Apartment defects vary, and miscellaneous work related defects among them include leakage of piping, poor finish on the walls floors under the kitchen sink, etc. These defects are directly related to the life of the residents, and inconveniences caused by defect occurrence can be increased.

However, compared to the rapidly changing economic and social structure, the relevant legal system and technical standards are not fully supported. The current law does not even have a clear definition of defects in apartments. In addition, the technical standards for apartments have only regulations concerning design and construction. Therefore, it is urgent to revise the social regulations of defects of apartments [3]. Among these legal standards, especially, the term of warranty liability is very important debate. The term of warranty liability is interpreted as the right period for claiming defect repair or the obligation period for defect repair. In other words, if the term of warranty liability is exceeded, the subject of business is not obligated to perform the defect repair, and the division owners lose the right to claim defect repair [4]. However, it is a problem because the item and period are arbitrarily extended or deleted as there is no basis for establishing the term of warranty liability in the related laws. In the early 1980s, when the law was first enacted, the foundation of the social system was relatively weak in the middle of industrialization. Even in the 2000s when the economy and society achieved stability, it is not possible to establish the foundation of the system. This point is representative of the underdevelopment of the entire construction related system, and it can be reconfirmed that the system hinders the development of the construction industry and does not support the promotion of construction technology [3]. Therefore, to resolve defect lawsuit smoothly, it is necessary to establish clear standards for defects. Particularly, the term of warranty liability is more important than anything else because it is the basis of these standards.

The purpose of this study is to review the limitations of the term of warranty liability of the Housing Act and to provide a rational basis for supplementing it. The purpose of the study is as follows. First, it is to examine the types of defects and the term of warranty liability for miscellaneous work. Second, it is to investigate the number of defect occurrence in miscellaneous work occurred in the apartment and derive its characteristics. Third, it is to compare this with the term of warranty liability and seek a reasonable alternative. The term of warranty liability in the Housing Act applies to the entire housing, but the main subject of defect lawsuit is the apartment housing. Therefore, the scope of this study was limited to apartments. In addition, the term of warranty liability is stipulated differently for each specialized work related to housing construction. It is divided into 18 categories, but there are 80 types by detailed type. The difference in the nature and characteristics of the work by specialized work due to the nature of the construction work must be considered. Therefore, this study was conducted on miscellaneous work. The method and order of conducting the study are as follows. First, we examined the type of defects in miscellaneous work and the term of warranty liability under the current laws and ordinances. Second, we investigated the defects in actual apartments and the percentage of defects that occur every year. Third, we derived the time that the cumulative rate of defect occurrence reaches 95% and 99%. Fourth, we compared this with the standard of term of warranty liability.

## **2. Another section of your paper**

### **2.1 Definition of defect**

In the Housing Act, miscellaneous work can be divided into ondol work, kitchenware work, indoor and outdoor equipment work, and metal work. The defect of miscellaneous work corresponds to other work that collects things that are difficult to divide into other types of construction work. However, it includes the Ondol, the main lifestyle and heating method of Koreans, and the kitchenware work is an important item directly related to the life of residents.

The types of defects that frequently occur in each detailed work are as follows. Typical examples of defects occurring in ondol work include 'heating hot water pipe breakage' 'heating pipe leakage', etc. In the kitchenware work, "poor finish of sink bottom floor and wall", "defective sink top plate", etc. are typical defects. The defects that often occur in metallic work include 'railing corrosion', 'stairs non-slip unfinished construction', etc.

## 2.2 Term of warranty liability in law

The term of warranty liability of an apartment is an exclusion period during which a division owner may exercise the right to request defect repair to a business subject.

The reason why the term of warranty liability is important in defect lawsuits is that it is judgment standard to determine whether defect lawsuit can be established or not. In other words, the division owner can be aware of the defects occurring in his apartment and claim for defect repair within the term of warranty liability [3].

The term of warranty liability of the current Housing Act for miscellaneous work is as follows. It is 3 years for ondol work, 2 years for kitchenware work and indoor and outdoor equipment work, and 1 year for metallic work. Because they are not part of the main structure, the term of warranty liability is relatively short.

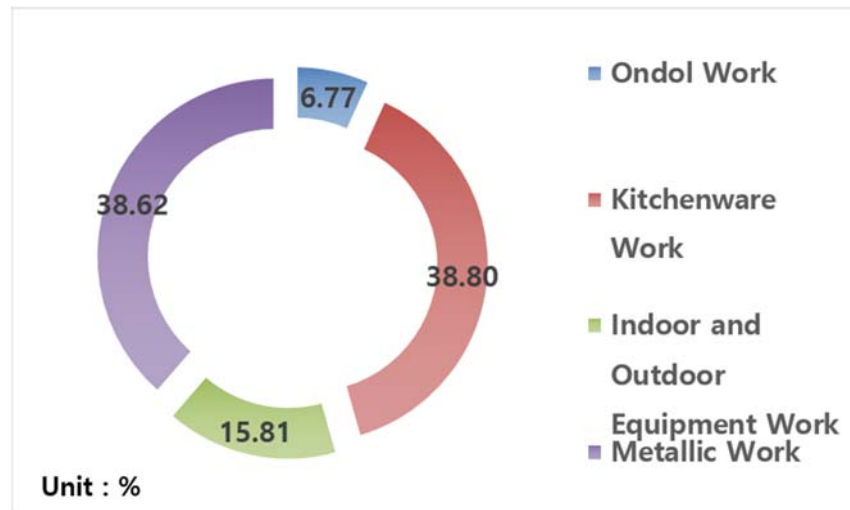
## 3. Defect case study

### 3.1 Outline

In this chapter, overall status of defects and the status of miscellaneous work defect that occurred in apartment buildings were investigated and analyzed. The surveyed apartments were built between 2002 and 2011 and a total of 177 complexes, 125,816 households.

### 3.2 Status of miscellaneous work defect

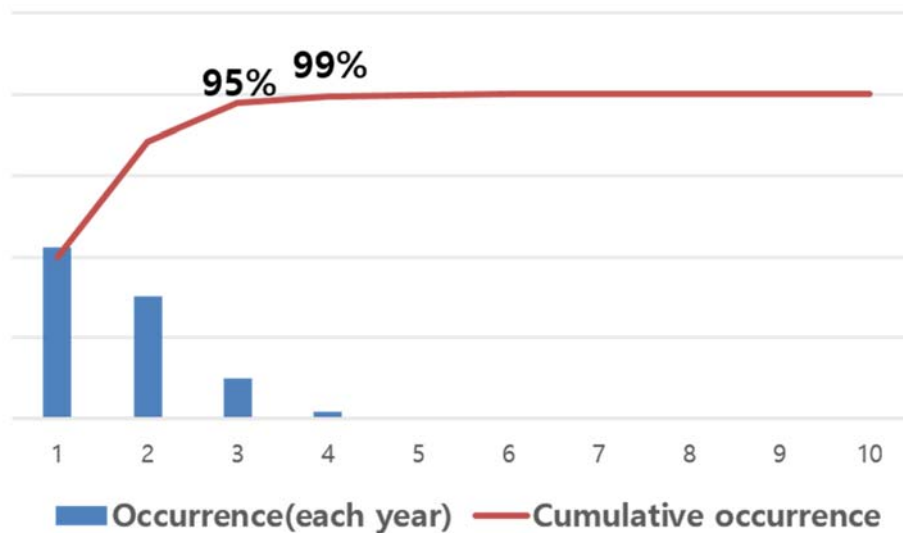
The order of occurrence of defects for detailed work of miscellaneous work is as follows (Figure 1). The most frequent detailed work was kitchenware work (38.8%) and metallic work (38.62%). Indoor and outdoor equipment work (15.81%) and ondol work (6.77%) were relatively small.



**Figure 1.** Distribution Chart of Miscellaneous Work Defect

### 3.3 Occurrence trend of miscellaneous work defect

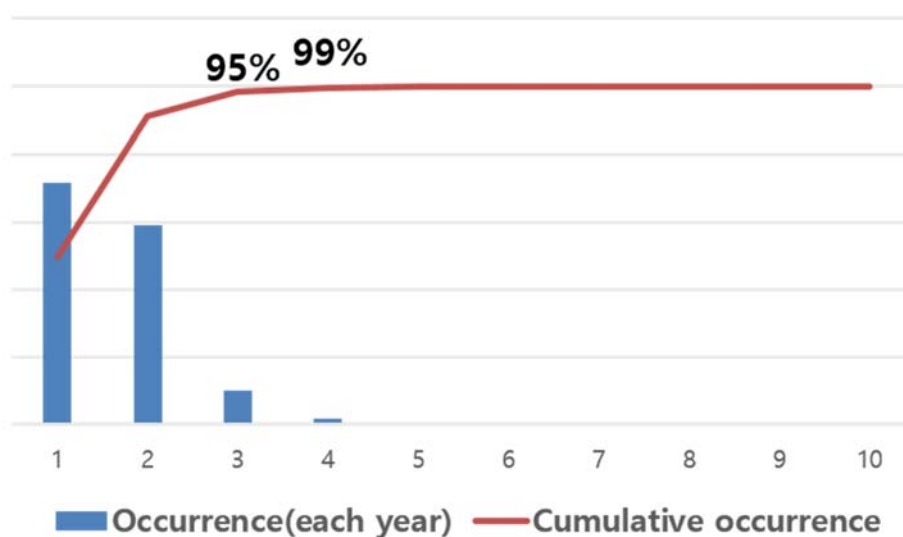
The number of defect occurrences by year and the number of defect occurrences accumulated each year for the defects that occurred in miscellaneous work show in the following graph (Figure 2). The defects in the first to third years in the first half reached 95% of the total, and the defects that occurred after that were very few.



**Figure 2.** Occurrence Trend of Miscellaneous Work Defect

### 3.4 Occurrence trend of ondol work defect

Examining by detailed work, ondol work showed similar trend to overall miscellaneous work (Figure 3). Compared with the term of warranty liability of the Housing Act, the ondol work is 3 years under the regulation, and the time when the defect occurrence cumulative rate reaches 95% was the same 3 years. Therefore, it is considered that the current standard and the trend of actual defect occurrence are similar.

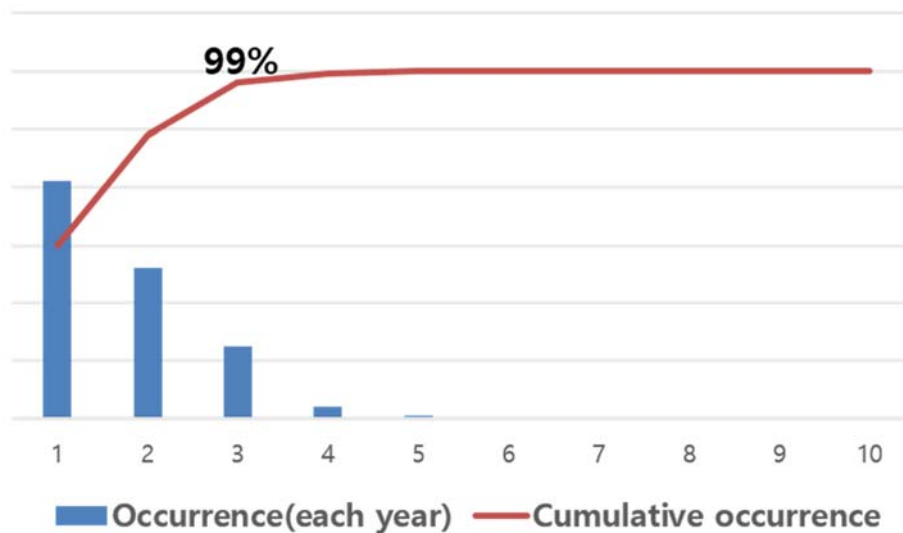


**Figure 3.** Occurrence Trend of Ondol Work Defect

### 3.5 Occurrence trend of kitchenware work defect

The kitchenware work accounted for 99% of the first to third year defects (Figure 4). Compared to the other detailed works of miscellaneous work, the tendency to concentrate on the early part was a little stronger. Compared with the term of warranty liability of the Housing Act, kitchenware work is 2 years under the regulation, and the time when the cumulative rate of defect occurrence reaches 95 and 99%

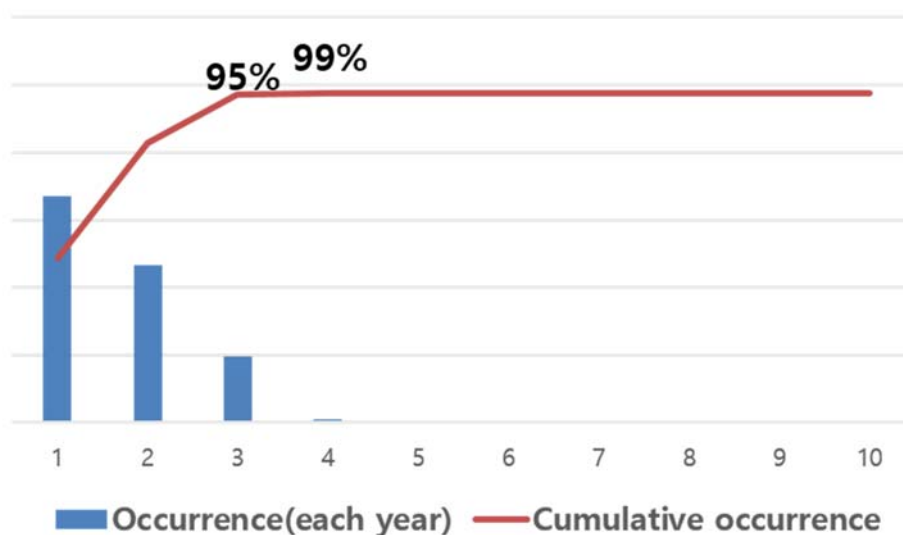
was 3 years. Therefore, it is considered that the current standard and the trend of actual defect occurrence are somewhat different



**Figure 4.** Occurrence Trend of Kitchenware Work Defect

### 3.6 Occurrence trend of indoor and outdoor equipment work defect

The indoor and outdoor equipment work also shows similar trend to defect occurrence for all miscellaneous work (Figure 5). Compared with the term of warranty liability of the Housing Act, indoor and outdoor equipment work was 2 years under the regulation, while the time when the defect occurrence cumulative rate reaches 95% was 3 years. Therefore, it is considered that the current standard and the trend of actual defect occurrence are somewhat different.

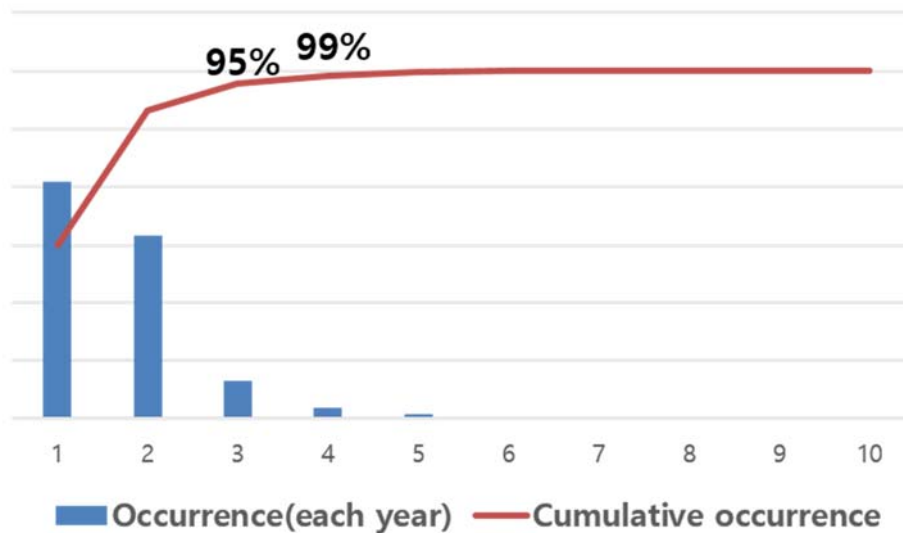


**Figure 5.** Occurrence Trend of Indoor and Outdoor Equipment Work Defect

### 3.7 Occurrence trend of metallic work defect

The metallic work also shows similar trend to defect occurrence for all miscellaneous work (Figure 6). On the other hand, compared with the term of warranty liability of the Housing Act, the metallic work was 1 year under the regulation, and the time when the defect occurrence cumulative rate reaches 95%

was 3 years. Therefore, in the case of metallic work with the shortest term of warranty liability among miscellaneous works, the current standard and the trend of actual defect occurrence were greatly different.



**Figure 6.** Occurrence Trend of Metallic Work Defect

#### 4. Results and discussions

The results of analysing the trend of defect occurrence by year and the trend of cumulative rates of occurrence defects in the miscellaneous work of the apartment are summarized as follows.

First, the trend of defect occurrence by year showed generally similar that of each detailed work compared to the whole miscellaneous work. Especially, it is confirmed that the defect occurrence of kitchenware work was concentrated most in early part

Second, in terms of the trend of cumulative rate of occurrence defect, the time when the defect occurrence cumulative rate of all miscellaneous work reached 95% was the third year, and 99% in the fourth year. This trend was all the same in ondol work, indoor and outdoor equipment work, and metallic work. In the case of kitchenware work, the time to reach 95% and 99% was the third year, which was relatively faster than other detailed works.

On the other hand, in the case of miscellaneous work, the term of warranty liability of each detailed work is different respectively, so it was impossible to compare and review the term of warranty liability for the entire miscellaneous work. Therefore, we compared the current term of warranty liability with the cumulative rate of actual defect occurrence (95%) for each detailed work.

First, in the case of ondol work, the current regulation and the trend of actual defect occurrence were 3 years, which similar each other

Second, in the case of kitchenware work and indoor and outdoor equipment work, the current regulation is 2 years, while the trend of actual defect occurrence was 3 years, which was different.

Third, in the case of metallic work, the current regulation is 1 year, while the actual defect occurrence was 3 years, which was greatly different.

Through this, it can be concluded that it is not desirable to uniformly unify the term of warranty liability of miscellaneous work.

#### 5. Conclusions

The defect lawsuits against apartment, the main residential style in Korea, have continued to be a social problem. In these defect lawsuits, the term of warranty liability is the period during which residents can

claim defect repair to the subject of business. As the right of claim is expired if the term of warranty liability is terminated, it becomes an important standard in defect lawsuit

However, as there is no clear standard on what grounds the law related to the term of warranty liability stipulates, there contains a severe problem in terms of the reliability and legitimacy of the current legal system.

The purpose of this study is to examine the limitations of regulation on the term of warranty liability of the Housing Act for the miscellaneous work and to provide a rational ground system for supplementing them.

First, it was investigated the number of defect occurrences of miscellaneous work actual occurred in apartment buildings and examined them by detailed work. The most defect of miscellaneous work was by kitchenware work and metallic work.

Second, the trend of defect occurrence by year appeared generally similar in all miscellaneous works and each detailed works

Third, comparing the term of warranty liability with the trend of cumulative rate of occurrence defect, the ondol work appeared similar, On the other hand, the rest of the works appeared different.

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