

SUMMARY

I. Subject

The development of an eco-friendly sandwich panel which is made of inorganic insulation.

II. The objective and necessity of this research and development

During the last half a century, It was a general trend that more economical and highly efficient materials were used, due to the growth - centered economic policy. Among the materials, sandwich panels are used at shopping malls, hotels, factories, big discount stores and distribution warehouses due to the convenience and economical efficiency of the construction of sandwich panels.

But, according to the increase of recognition that sandwich panels are harmful with the improvement of economical ability, people could know the problems of existing sandwich panels, so the suits and repulsion are occurring.

Glasswool sandwich panels is produced and used much secondly following styrofoam sandwich panels due to excellent thermal transmission properties and incombustibility, but glasswool and mineralwool are mistrusted that can be a cancer-causing factor, respiratory disease and skin stimulation.

The fire problem of sandwich panels is also serious. There was a conflagration in a distribution warehouse that was made of sandwich panels in anyang, kyonggido in February, 2004 and the amount of damage was 20 billion won. And there was another fire in Chungdo mushroom farm which was made of sandwich panels - 12 people died there. The fire of buildings that are made of sandwich panels causes big accidents. - Selter for mentally retarded people (Yangpyeong, 1997) Sealand youth camp (hwaseong, 1999), a big discount store (Pohang, 2001) large industrial complex factories (Daegu, 2001) an institute (Kyonggi Kwangju, 2001), etc.

The difficult point of waste dealing of sandwich panels also is a social problem. For the dealing with glasswool and mineralwool waste, we have to give notice to city offices, gun offices, and gu offices that take charge. The way of dealing the waste depends on reclamation. It also becomes the causes of the lack of resource and environmental pollution. Urethane never melts again even though it is heated so it can be the problem of recycling.

Therefore we have to make up for the weak point of sandwich paneals which cuases these problems and develop much better sandwich panel prouducts

III. The contents and province of the research and development

The final purpose of this study is to develop sandwich panels that are made of eco-friendly inorganic insulation. The main contents of this study is to put the core material

and assembling system of sandwich panels to practical use by an efficiency test, analysis and verification according to national construction standard and KS standard requirements

The details and province that we want to carry out in this study progress this year are follows.

- The tendency of the study, characteristics, develop of the eco-friendly sandwich panels
 - The analysis of the tendency on the study of sandwich panels
 - The analysis of the relative standards on sandwich panels
 - The investigation of the existing sandwich panels
 - The develop of the eco-friendly sandwich panels

- The inquisition of the insulation of the sandwich panels

- The product of the eco-friendly sandwich panels
 - The design and product of the sandwich panels
 - The standardization and specifications on sandwich panels
 - The investigation of the installation of existing sandwich panels

- The test on the properties and the analysis of sandwich panels
 - The test of the sandwich panels following the relative standards on sandwich panels

- The study on the management of the waste
 - The investigation of the management of sandwich panels and the analysis of the characteristics