New Products

Furukawa Fire Limit Lead-Through Treatments to Meet Varied Needs

1. INTRODUCTION

The structures that people use for their activities must be supplied with the electricity, gas, water and other services required for manufacturing and daily life. The means used for their supply are wires, cables and pipes (hereinafter referred to as “cables, etc.” for short), but they are not always made of non-combustible materials. In order that, when fire breaks out inside a structure, the cables, etc. do not act as a route for its spread and cause greater damage to the occupants or the structure itself, the Building Standards Law provides for the designation of “fire limits”. Further, when the cables, etc. pass through fire limits, it is necessary that the construction specifications and their fire-resistant properties be confirmed to be those certified by the responsible authorities. (In Japan, Building Standards Law Enforcement Ordinances, Article 129-2-5, Section 1, Paragraph 7).

Since the cables, etc. that are laid in structures pass through the fire limits via a variety of routes, the position and configuration of lead-throughs are also dissimilar. Since the safety of occupants and structure cannot be assured unless appropriate measures can be taken with respect to these various lead-throughs, it is important that fire protection measures at lead-throughs use the simplest structures and the easiest construction techniques. Here we would like to bring to your attention some products that achieve this: ROKUMARU, ICHIJIKAN fire-resistant packs, and ICHIJIKAN HOLD.

2. ROKUMARU

By changing from the putty and fireproof board technique now in general use, which is a specialized technique that requires a high level of expertise, to a technique involving the packing of fire-resistant blocks, which can be done by anyone, it has been possible to shorten the working time, and to assure that restoring lead-throughs during the renovations that have become increasingly frequent in recent years is easier and more reliable.

2.1 Features

(1) ROKUMARU is a highly flexible construction technique involving filling with fire-resistant blocks, which can be used at lead-throughs by electric wires, cables, bus ducts, as well as the electrical conduits that can also be made of plastics.
(2) Since it does not use power tools and is a clean method that does not produce dust, it has no adverse impact on the working environment.
(3) In order to suit the various lead-through configurations and lead-through materials, the product consists of combinations of fire-resistant blocks of five sizes (SS, S, M, L and LL) for a kit.
(4) To accommodate additional wiring during building renovations, fire-resistant blocks can be removed, and easily replaced once the new wiring is installed.

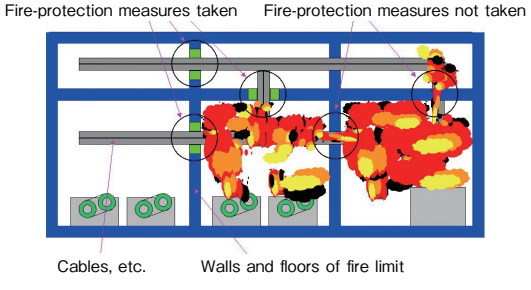

Figure 1 Conceptualization of fire-protection measures.

Figure 2 ROKUMARU kits.

2.2 Fire-Resistant Properties

As a result of its ceramic-based heat-insulating properties and heat expanding properties, ROKUMARU has passed legally established flammability tests, and with respect to various wall and floor lead-throughs for cables, bus ducts etc., it has obtained certification by Japan's Minister of Land, Infrastructure and Transportation.

3. ICHIJIKAN Fire-Resistant Packs

In terms of configuration, almost all piping for utilities consists of plastic pipe or those provided with plastic lagging, and because the shrinkage in volume when exposed to flame or heat is so dramatic, materials with heat expanding properties are generally used with respect to measures at lead-throughs.

ICHIJIKAN fire-resistant packs consist of heat expanding materials wrapped with plastic film, so they constitute a simple and clean construction technique.

3.1 Features

(1) Depending on the aperture size, the required heat expanding material is sealed in a single plastic film and used directly, making it unnecessary to fill with mortar or other non-flammable material.
(2) Since it is sealed in plastic film, there is no fear of soiling either the vicinity of the lead-through or the hands.
(3) Depending on aperture size, the five-size kit is available.
(4) Since there is no need to cover in mortar or use power tools, set-up work can be accomplished in a labor-efficient manner.
(5) Renovation work can be easily addressed by removing a HEATMEL pack, laying any piping, and re-inserting the pack.

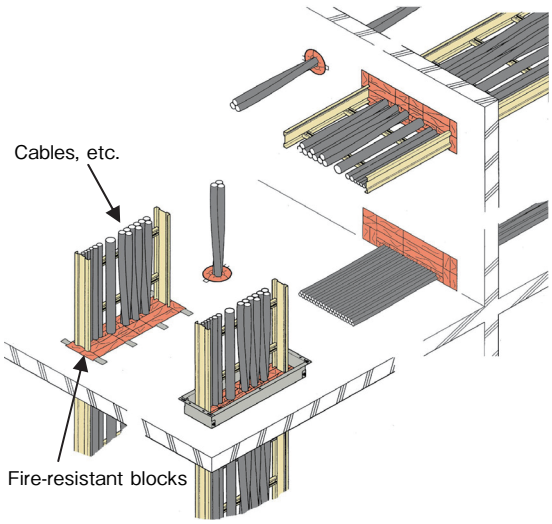

Figure 3 Typical ROKUMARU applications.

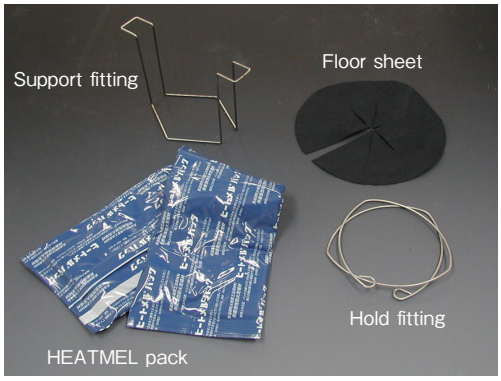

Figure 4 ICHIJIKAN fire-resistant pack kits.

3.2 Fire-Resistant Properties

As a result of the heat expanding properties of HEATMEL packs, they have passed legally established flammability tests, and with respect to various wall and floor lead-throughs for copper tubes with heat-insulating sheathing and plastic tubes, they have obtained certification by Japan's Minister of Land, Infrastructure and Transportation.

4. ICHIJIKAN HOLD

These are suited to use in condominiums and other apartment buildings at lead-throughs for utilities piping, such as plastic pipes for hot and cold water supply.

4.1 Features

(1) ICHIJIKAN HOLD are products molded from heat expanding material.
(2) Molded heat expanding material can easily be fitted over piping, and can be installed in apertures.
(3) Is available in two sizes, S and L, and can be used with pipes with outside diameters of up to 48 mm.

4.2 Fire-Resistant Properties

As a result of the heat expanding properties of ICHIJIKAN HOLD, they have passed legally established flammability tests, and with respect to various wall and floor lead-throughs for plastic tubes etc., they have obtained certification by Japan's Minister of Land, Infrastructure and Transportation. Also, in evaluation by the Fire Protection Equipment Center of Japan, they have been confirmed to

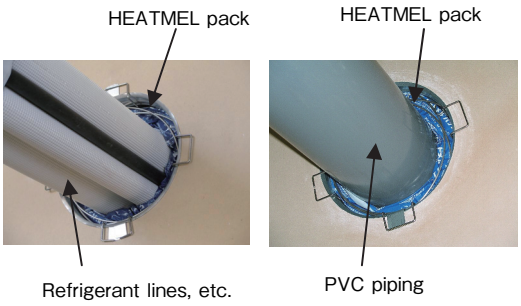

Figure 5 Typical installations of ICHIJIKAN fire-resistant packs.

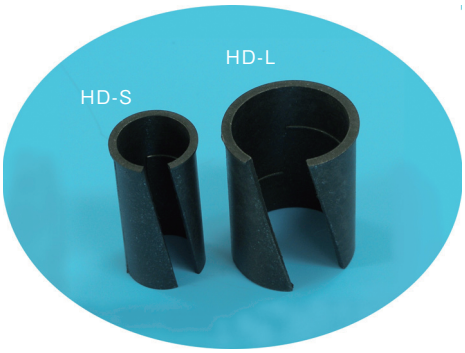

Figure 6 ICHIJIKAN HOLD.

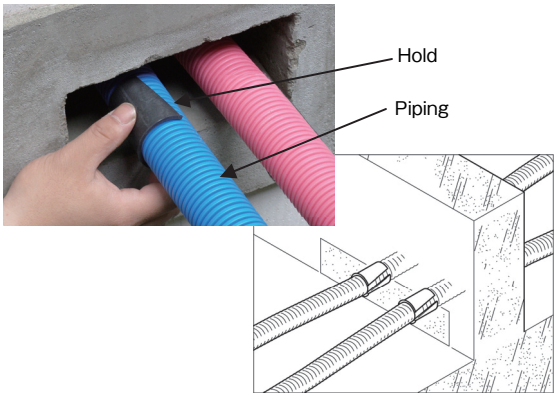

Figure 7 Typical installation of ICHIJIKAN HOLD.

have the performance under Ministerial Ordinances and notifications relating to the Fire Defense Law.

5. CONCLUSION

Achieving longer life for buildings and structures presupposes not only routine maintenance, but also large-scale programs of repair and renovation. This raises the issues of ease of removal and re-installation at the time of renovation, and of reducing the amount of scrap material and making it easier to recycle.

It is our view that ROKUMARU, reusable construction techniques as exemplified by ICHIJIKAN fire-resistant packs, and ICHIJIKAN HOLD, which involve no components other than the requisite heat expanding material, offer effective ways of addressing these issues.

In future we are committed to developing products that are responsive to the needs of the market, and to make a contribution to the community by supplying products for the treatment of lead-throughs in fire limits.

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