Fire Resistance Ratings - ANSI/UL 263 (BXUV)–*Continued*

Partition Panel Units — The category for a group of Classified Products. The complete description of the products in the category and supplementary requirements for Classification are contained in Units, Partition Panel (CJMR).

Prefabricated Building Columns — Structural building columns that include a fire resistive protection system when delivered to the construction site. These products are Classified and are identified as Prefabricated Building Columns (CGHT). The complete description of the products and supplementary requirements for Classification are covered in (CGHT).

Through Penetration — An item such as a pipe, cable tray or duct that passes through a horizontal or vertical fire resistive assembly.

Through Penetration Firestop Systems — An assemblage of specific materials rated in accordance with ANSI/UL 1479 (ASTM E814). Firestop systems maintain the fire containment integrity of horizontal or vertical fire resistive assemblies where through penetrations are located. See Through-Penetration Firestop Systems (XHEZ) in Volume 2 of this directory.

Unprotected Fire Resistive Assemblies — Assemblies that do not require direct applied coatings or suspended ceilings to protect the structural elements.

3. Numbering System

The summarized form of the test assembly is identified by an alphanumeric design number. The prefix letter designates the group of construction, the first number designates the type of protection and the other numbers and letters identify the particular assembly.

The prefix letters representing the various groups of constructions are:

Prefix Letters	Group of Construction
A	Floor-Ceiling Designs-Concrete with Cellular Steel Floor Units and Beam Support
D	Floor-Ceiling Designs-Concrete with Steel Floor Units and Beam Support
G	Floor-Ceiling Designs-Concrete and Steel Joists
J or K	Floor-Ceiling Designs-Precast and Field Poured Concrete
L	Floor-Ceiling Designs-Wood or Combination Wood and Steel Joist Assemblies
N	Beam Designs-for Floor-Ceiling Assemblies
P	Roof-Ceiling Designs
S	Beam Designs-for Roof-Ceiling Assemblies
U or V	Wall and Partition Designs
X or Y	Column Designs

II. GENERAL

The following information is appropriate to all fire resistive designs described in this Directory. It is recommended that the users review this information in addition to the general guidelines provided for specific materials and construction types.

Authorities Having Jurisdiction should be consulted before construction.

Fire resistance ratings apply only to assemblies in their entirety. Except for those separately rated structural members supporting tested assemblies, individual components are not assigned a fire resistance rating and are not intended to be interchanged between assemblies but rather are designated for use in a specific design in order that the ratings of the design may be achieved.

All ratings are based on the assumption that the stability of structural members supporting the assembly are not impaired by the effects of fire. The extent of damage of the test assembly at the rating time is not a criteria for the rating.

The specifications for materials in an assembly are important details in the development of fire resistance ratings. Those materials provided with an "*" in the design text are eligible to be produced under the Follow-Up Service Program of Underwriters Laboratories Inc. Information identifying such materials and the Classified Companies authorized to provide the materials are located in the product category section of this Directory. The appearance of the Classification Marking on the product is the only method provided by UL to identify products that have been produced under its Follow-Up Service.

1. Metric Dimensions

It is recommended that the Metric Guide for Federal Construction published by the National Institute of Building Sciences (NIBS) be consulted for guidance regarding the use of metric dimensioned building materials. The dimensional conversion of building materials from the inch-pound system to metric may either be hard or soft.

Hard conversions are typically applied to manufactured products used in modular construction. These products include suspended ceiling systems, gypsum wallboard, insulation boards, etc. Classified products which are

Fire Resistance Ratings - ANSI/UL 263 (BXUV)–*Continued*

available in metric sizes are identified in the Classification information for the individual product categories located near the end of this Directory.

For soft conversions, inch-pound dimensions are mathematically converted to exact equivalent metric values. Examples of dimensions which may be soft converted include concrete thickness, depth of concealed space above suspended ceilings and coating thicknesses.

It is recommended that dimensions which are identified as minimum or maximum in fire resistive designs be initially softly converted and, if required, further converted to a hard metric equivalent following the min/max guidance. The spacing of hanger wire and other supports for suspended ceilings would be examples requiring this type of consideration.

2. Penetrations

Penetrations through all or a portion of an assembly can significantly affect the rating. Firestop systems developed to protect openings created by penetration items are covered in Volume 2 of the Fire Resistance Directory.

3. Finish Ratings

A finish rating is established for assemblies containing combustible (wood) supports. The finish rating is defined as the time at which the wood stud or wood joist reaches an average temperature rise of 250 degrees F or an individual temperature rise of 325 degrees F as measured on the plane of the wood nearest the fire. A finish rating is not intended to represent a rating for a membrane ceiling. The requirements for finish ratings are not included in Standard ANSI/UL 263.

4. Nails and Screws

Nails are specified according to ASTM F 547 or ASTM C 514. Nails used to attach gypsum board to wood framing shall be cement coated box nails or cement coated cooler nails unless specified otherwise in the specific designs. Screws meeting ASTM C 1002 or ASTM C 954 may be substituted for nails, one for one, when the head diameter, length, and spacing equal or exceed the requirements for the specified nails.

5. Interior and Exterior Applications

The fire resistive designs and the UL Classified materials are investigated with the understanding their use is limited to interior applications unless the design or the Classification information for the material includes a statement such as "Investigated for exterior use" or unless the exterior use is obvious as in the case of roofs or coated metal wall facings used in exterior walls.

6. Exposed Interior Finishes

The surface flammability and smoke development characteristics of Classified materials that may be used as exposed interior finishes are measured by the test method in Standard ANSI/UL 723 (ASTM E84 and NFPA 255), Test for Surface Burning Characteristics of Building Materials. The flame spread index of these materials is less than 200 and the smoke development index of these materials is less than 450. Surface Burning Classifications are contained in the Building Materials Directory.

7. Radiant Heating Cables

The effect of the use of electrical radiant heating cables or wires on the fire resistance performance of assemblies has not been evaluated.

8. Coating Materials

Coating materials include products identified as: 1) Spray-Applied Fire Resistive Materials and 2) Mastic and Intumescent Coatings.

The type of material is specified in each design. Materials that have been evaluated for exterior application are so indicated in the individual designs and in the product category.

Regulations governing the application and use of coating materials have been promulgated by many governmental agencies. Authorities Having Jurisdiction should be consulted for current local requirements.

Spray Applied Fire Resistive Materials

The surfaces on which the material is to be applied must be free of dirt, oil and loose scale.

Unless specifically prohibited in a design, materials identified as Spray-Applied Fire Resistive Materials (CHPX) may be applied to primed or similarly painted wide flange steel shapes and pipe and tube shaped columns provided: (A) the beam flange width does not exceed 12 in.; (B) the column flange width does not exceed 16 in.; (C) the beam or column web depth does not exceed 16 in.; (D) the pipe outer diameter or tube width does not exceed 12 in.; (E) bond tests conducted in accordance with the Standard Test Method for Cohesion/Adhesion of Sprayed Fire Resistive Materials Applied to Structural Members, ASTM E736, shall indicate a minimum average bond strength of 80 percent and a minimum individual bond strength of 50 percent when compared to the bond strength of the fire resistive coating as applied to clean uncoated 1/8 in. thick steel plate. The average and minimum bond strength values shall be determined based upon a minimum of five bond tests conducted in accordance with ASTM E736.

The bond tests need only be conducted when the fire resistive coating is applied to a primed or similarly painted surface for which acceptable bond strength performance between the primer or other similar material and the fire resistive coating has not been measured. A bonding agent may be applied to the primed or similarly painted surface to obtain the minimum required bond strength where the bond strengths are found to be below the minimum acceptable values.