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Several fires have occurred recently in Type IV structures covered with aluminum sheathing. A fireman fell and was severely injured at one of these fires when a section of the roof gave way while he was cutting a hole in the aluminum sheathing to ventilate the building. This particular structure (see picture below) is a one story building 36 feet wide and 204 feet in depth. Roof and sides are covered with corrugated sheet aluminum laid over a framework of steel pipe. Aluminum sheets, are 26 inches wide and 10 feet long, held in place by lead-headed straw-nails twisted around the pipe framework.

At another fire in this type of structure (see picture on reverse side) a good portion of the roof had already burned out when the First-In-Companies arrived. The resulting large free burning fire and adjoining structures presented an exposure problem which was of immediate concern to the fire fighters.

NO PICTURE

Subsequent investigation of this fire revealed that it could not have been burning more than 15 minutes from the time it started until it was noticed by a neighbor who called the fire department.

In discussing fire fighting techniques applicable to aluminum structures of this type, the following points should be considered:

1. These roofs may be safe to walk on normally but when heated by fire they become unsafe. An added hazard is created to personnel working on the roof when any part of the sheathing is cut for ventilation purposes. If a man steps any place close to the cut portion, a section of the roof may give way very easily. In any event it seems advisable that roof ladders be used wherever possible while working on the roofs of these structures under fire conditions.

2. Due to method of construction -- single thickness walls and roof, and no attic -- any fire within may subject all of the aluminum covering to heat. Aluminum has a melting point of approximately 1300 degrees Fahrenheit, a temperature which can be expected about 10 minutes after the start of most fires. Because of these conditions we can expect these structures to vent themselves quicker than other types. On arriving at a confined fire in these buildings, bear in mind that when the roof temperature reaches the melting point of aluminum, the whole roof may burn out very rapidly, causing an unexpected and severe exposure hazard. To a large degree this condition, however, would depend on contents and method of storage.

From a fire prevention viewpoint it should be stressed that these structures offer little fire protection to either the contents or adjacent structures, even though they are an approved Type IV building. In the absence of an approved automatic fire extinguishing system or in the event the fire department is <u>not</u> called immediately when a fire occurs, a complete loss can be expected.

NO PICTURE