

TG8:15

Fire damage



The Confederation is often asked if scaffolding equipment that has been exposed to excessive heat, such as during a building fire, can be safely re-used.

The review of TG8 had to take into account the increased use of System Scaffolds, Aluminium products and ancillary items such as pre-fabricated transom units.

There is no simple answer to this question as a great deal depends upon the temperature of the fire, the time the equipment was exposed to the temperature and the type and grades of materials used in the original manufacture of the equipment. At higher temperatures the strength of most metals decreases and this can often have a permanent effect on the metal's strength at normal temperatures. The time of exposure can also cause grain growth, which will almost inevitably result in lower fatigue properties for the equipment. Another critical factor is how rapidly the material is cooled from its high temperature. Cold water being used to extinguish the fire could make the material brittle.

With the high cost of energy and the ongoing effect of Health and Safety legislation, an increasing amount of equipment is manufactured by cold and hot working methods, which frequently adds to the strength of the finished product. Exposure of such equipment to excessive temperatures can affect the material structure. Samples would require examination.

In practice all fire damaged equipment should be carefully examined before re-use as the risk of failure in subsequent service is very high. In some cases specialist examinations should be sought.

Scaffold contractors should be aware that the heating of equipment to remove paint etc. could have the same deteriorating effect as a building fire. It is therefore particularly important to check how second-hand equipment had been cleaned before it is purchased, from a product strength viewpoint as well as product security.

If there is any doubt about the safety of the equipment it should never be used. It would be sensible, considering the relatively low cost of equipment that has been directly affected by fire, to scrap the product. However, conductivity at a reasonable distance from the fire is unlikely to cause damage. It is safe to assume if the galvanising has melted, the structure is affected. There is a simple check that can be carried out on fittings. A hardness comparison check can be carried out on the bolt of a new fitting, which in most cases is the only heat treated element of the fitting, the rest of it being manufactured from mild steel. Mills couplers are the exception as they are manufactured from high carbon steel, accordingly this would also need to be taken into consideration on pre-fabricated transom units that may have Mills couplers incorporated. If in doubt scrap the coupler or ask for expert help. Welding technology on system scaffolds is critical to the performance of the product and careful examination would be required in this instance. Aluminium products would also require the same consideration.

Whilst every effort has been made to provide reliable and accurate information, we would welcome any corrections to information provided by the Writer which may not be entirely accurate, therefore and for this reason, the NASC or indeed the Writer, cannot accept responsibility for any misinformation posted.



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1 of 1

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