



Uncertified Welded Modifications

Storage Equipment Manufacturers Association Ltd www.sema.org.uk

It can sometimes be tempting to modify and alter racking components with practices such as;

- making a beam shorter by cutting the beam end connector off a beam, shortening the beam, and then rewelding the connector,
- lengthening a beam by welding two shorter beams together,
- making a new beam by welding connectors to a structural profile,
- welding upright or bracing profiles together to make a longer piece.

It is sometimes argued that the manufacturers weld the beam profile to the beam end connector and, therefore, such practice must be acceptable.

Beams are often made using steel that is about 30% of the thickness of the beam end connector. Successfully welding together pieces of such differing thicknesses is technically difficult and needs specific welding procedures and quality control. So, whilst manufacturers do weld the beam profile to the beam end connector; they do this according to a specific procedure in controlled factory conditions and also carry out extensive structural testing of the connection so that structural behaviour is guaranteed. Therefore, welding which does not conform to the manufacturer's procedure risks undermining structural performance and hence, safety.



Is this OK? Will the beams carry the quoted load?

Of course, when the beam end connector is cut from a beam and the paint on the beam end connector is removed (imperative to give a good weld) there is the risk that the connector will be damaged which can further change the design capacity.



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Is this connector still OK? How about the uprights and bracing? Is this what the designer intended?

Racking profiles typically use steel a good deal thinner than most welders normally encounter. Successful welding of such material is highly skilled requiring specialist techniques and procedures.

It is for these reasons that warnings are given in a variety of publications for example;

The HSE publication “Warehousing and storage – A guide to Health and Safety” (HSG76) states that “*Racking should never be altered (e.g. by welding) nor components removed without first consulting the manufacturer*”

The SEMA Code of practice for the Use of static pallet racking states that “*Physical alterations to racking beams such as welding additional bearers or cleats etc. should not take place without the agreement of the Supplier or Manufacturer*”.



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BSEN15635 states that “changes to the storage equipment by welding or bolting shall not be allowed unless specifically approved by the equipment supplier”.

BSEN15635 goes on to state that “Repairs to damaged components shall not be allowed unless approved by the equipment supplier”, and this is because “effective quality control is difficult on cold-formed materials”.

Altering or welding rack components without the manufacturer’s approval risks structural collapse and will invalidate warranties or guarantees provided by SEMA members.

SEMA advises against such alterations. Users adopt these methods at their own risk.

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