

Mechanical Behaviour of High Strength Steel Thin-Walled Profiles for Automated Rack Supported Warehouses

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Abstract : In the framework of the evaluation of the applicability of high strength steel to produce thin-walled elements to be used in Automated Rack Supported Warehouses, an experimental campaign is carried out to evaluate the structural performance of typical profile shapes adopted for such purposes and made of high strength steel. Numerical models are developed to fit the observed failure modes, stresses, and deformation patterns, and proper directions are proposed to simplify the numerical simulations to be used in further applications and to evaluate the mechanical behavior and performance of profiles.

Keywords : Steel racks, Automated Rack Supported Warehouse, thin walled cold-formed elements, high strength steel.

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