

# SUPERSLIM SOLDIERS



## 1.1.4. Beams with Compression Flanges Restrained

The Superslim Soldier is a lightweight member and it is not generally appropriate to use established design codes for beam analysis. Performance of the unit has been derived from a combination of calculation and extensive load testing. Due to the presence of various web perforations, performance is affected by both shear stiffness and the bending stiffness of the member. Analysis of beam deflection is complex, for deflection calculation by simplistic analysis, reduced EI value of  $3200\text{kNm}^2$  gives good correlation with the more rigorous analysis.

When used as a beam it is important that the soldier is restrained laterally at load points and supports. On a shutter this lateral restraint is provided by the face contact material, backing members and specified connections between the components acting as a stiff diaphragm to restrain the connected flange of the Superslim. Integral intermittent welded web stiffeners in the Superslim transfer this lateral restraint to the unconnected flanges. When used as an isolated beam it is normal to provide lateral restraint using scaffold tubes coupled to the flanges of the soldier. When lateral restraint is not provided refer to 1.1.5 for Allowable Working Loads.

When bending on the weak axis, the soldier should be treated as two individual channel members, each with a moment of resistance of  $3.12\text{kNm}$ . Individual loads act on the single channel and transfer the forces through the welded stiffeners to the other channel.

### Combined Loading

Performance under conditions of combined bending, bearing and shear loading is checked using the graph below for a range of connecting accessories.

