

AD 420: Minimum values of shear and bending moment in beams with web openings

Table 3.1 of SCI publication P355 gives minimum values of co-existent shear and bending moment to be used at beam openings. This AD provides clarity on how these minimum values are to be used.

The concern behind the minimum values was to allow for non-uniform loading, to guard against the situation when the shear force at an opening could

theoretically be zero. Table 3.1 therefore includes minimum values of the shear force to be allowed for in design. The minimum values of shear force in Table 3.1 have an associated bending moment.

The intention was that the minimum shear force and associated bending moment from Table 3.1 should only be applied if the theoretical shear at an opening was less than the minimum quoted. There

is no requirement to apply the minimum bending moment at all openings – the minimum bending moment should only be applied if the minimum shear force is used in design.

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New and revised codes & standards

From BSI Updates June 2018

BS EN PUBLICATIONS

BS EN 1011-8:2018

Welding. Recommendations for welding of metallic materials. Welding of cast irons
Supersedes BS EN 1011-8:2004

BS EN 10219-2:2006

Cold formed welded structural hollow sections of non-alloy and fine grain steels. Tolerances, dimensions and sectional properties
Corrigendum, April 2018

CEN EUROPEAN STANDARDS

EN 287-6:2018

Qualification test of welders. Fusion welding. Cast irons

EN 14399-9:2018

High-strength structural bolting assemblies for preloading. System HR or HV. Direct tension indicators for bolt and nut assemblies

EN 14399-10:2018

High-strength structural bolting assemblies for preloading. System HRC. Bolt and nut assemblies with calibrated preload.

CORRIGENDA TO BRITISH STANDARDS

BS EN 10219-1:2006

Cold formed welded structural hollow sections of non-alloy and fine grain steels. Technical delivery requirements
Corrigendum, April 2018

DRAFT BRITISH STANDARDS FOR PUBLIC COMMENT - ADOPTIONS

18/30336161 DC

BS ISO 6930 High yield strength steel plates and wide flats for cold forming. Delivery conditions
Comments for the above document were required by 7 June, 2018

BUILDING WITH STEEL

Reprinted from Volume 5 No. 2
June 1968

General Post Office Expansion and Composite Construction

The West Central District Office, Holborn, London, and the Postal and Sorting Office in Whitechapel Road, London

The West Central District and Eastern District Offices are large multi-storey projects for the mechanised handling and sorting of general letter and parcel mail. These offices require large basic grids and have storey heights much greater than normal offices. Likewise, there are the same requirements for future adaptability and modification. The basic grids are 40 ft by 32 ft and 47 ft by 47 ft respectively.

Mainly because of an insufficiency of repetition and irregular plan configuration, lightweight aggregate precast concrete floor panels have not been used on these projects. Instead both have the

major basic skeleton in steelwork, with secondary beams and floor slab in *in situ* reinforced concrete, the two elements acting compositely.

This produces a waffle like grid which means that the slabs and their supporting beams span in both directions. Hence, the floor slabs are relatively thin, and because of the two-way span system can tolerate quite large holes being cut through in the future. The two-way system reduces overall floor and beam depth. The use of steel for the main skeleton minimises the overall dimensions of the main stanchions, and reduces dead loads.

It is of interest to note that at W.C. District Office (pictured) two lines of stanchions were eliminated between ground and first floor to provide clear areas for vehicles



between the loading platforms. This was achieved by the introduction of twin welded plate girders in B.S. 968 steel spanning 65 ft, each pair supporting an upper stanchion at mid span carrying approximately 850 tons. The senior architect

for these two projects was E.T. Sargeant, ARIBA, AMPTI, and the Senior Structural Engineer was R. C. Westbrook, MStructE.

To read about the W.C. District Office's latest incarnation, see 'In the post', NSC March 2018