New and revised codes and standards

From BSI Updates June2023

BS EN PUBLICATIONS

BS EN 17549-2:2023
Building information modelling. Information structure based on EN ISO 16739-1 to exchange data templates and data sheets for construction objects. Configurable construction objects and requirements
no current standard is superseded

BS IMPLEMENTATIONS

BS ISO 21928-2:2023
Sustainability in buildings and civil engineering works. Sustainability indicators. Framework for the development of indicators for civil engineering works
no current standard is superseded

NEW WORK STARTED

EN ISO 17635
Non-destructive testing of welds. General rules for metallic materials
will supersede BS EN ISO 17635:2016

ISO 18878
Mobile elevating work platforms. Operator (driver) training
will supersede BS ISO 18878:2013

DRAFT BRITISH STANDARDS FOR PUBLIC COMMENT – ADOPTIONS

23/30420673 DC
BS ISO 59004 Circular Economy. Terminology, Principles and Guidance for Implementation
Comments for the above document were required by 17 June 2023

23/30420676 DC
BS ISO 59010 Circular Economy. Guidance on the transition of business models and value networks
Comments for the above document were required by 7 June 2023

23/30420679 DC
BS ISO 59020 Circular economy. Measuring and assessing circularity
Comments for the above document were required by 11 June 2023

23/30441434 DC
BS EN ISO 10882-1 Health and safety in welding and allied processes. Sampling of airborne particles and gases in the operator's breathing zone. Sampling of airborne particles
Comments for the above document were required by 3 July 2023

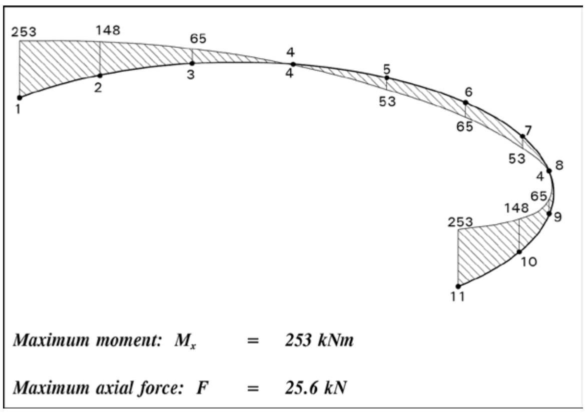
ISO PUBLICATIONS

ISO 25980:2023
Health and safety in welding and allied processes. Transparent welding curtains, strips and screens for arc welding processes
Will be implemented as an identical British Standard

AD 510: P281 worked example of beams curved on plan

SCI publication P281 was published in 2001 covering the design of curved steel members, in accordance with BS 5950. It is clear that this guide is still used, as SCI receive occasional questions. The most common question, repeated recently, concerns example 6 which covers the verification of a universal beam curved on plan.

The design process starts by applying the vertical load to the curved beam, which produces a bending moment diagram as reproduced from the example:

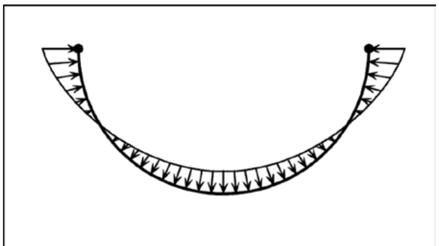


Designers following the example generally question how the axial force of 25.6 kN shown below the bending moment diagram has been determined. The unfortunate answer is that the determination of this axial force should have come later in the process – the value is correct, but the location of the text causes confusion.

The bending moment as shown above is converted into axial forces in the flanges, simply by dividing the moment by the lever arm between the flanges. If the top flange is considered, the flange force is tension near the supports varying to compression at the furthest part of the curved member.

Since the top flange is curved on plan, the axial force just calculated has a radial component of varying intensity – the component is "inward" adjacent to the supports, and "outward" when the flange force is compression.

This varying radial force is shown below (again taken from P281).



Radial load on top flange

The next step is to analyse the curved member again, with the loading shown above. This produces a bending moment (given as 149 kNm in the example) and an axial force. The value of this axial force is the 25.6 kN, which has been quoted at the earlier location in the example.

The process is described in steps in section 8.5.4. As there are two forces "F", it may be helpful to identify them separately. In Steps 1 and 2, the equivalent flange force – which leads to the radial components, might be defined as F_1.

Steps 3 and 4 cover the analysis of the member subject to the radial loads, which produces an axial load which might be defined as F_2. In this example, F_2 = 25.6 kN. Referencing this force within Steps 1 and 2 of the numerical example has led to the confusion identified earlier in the Note.

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