

## COMPLEX STANDS - DOUBLE DECK STRUCTURES

### STAND DESIGN REQUIREMENTS

1. Double Decker Stands will normally be designed using steel or aluminium structural frameworks. Proprietary products ( ie Octanorm) may also be utilised but must be designed in strict accordance with manufactures specifications and recommendations. Timber construction for Double Decker Stands may only be used with Organiser's prior permission
2. Structural designs are to be prepared for all Double Deck structures for submission to organiser / venue approval. Designs are to utilise recognised and relevant International or National Design Codes and guidance.
3. Calculations are to prove that the stand is stable and capable of supporting the dead load of the structure and a live load on the Upper Deck of 5 kN/m<sup>2</sup>. If lower loadings are used, the designer is to include in the design information details of maximum numbers of persons anticipated to be present at any one time on the Upper Deck, together with details of how access to the upper deck is to be stewarded / restricted.
4. The calculations should also be carried out for stability and sway moments, these should be counteracted using either bracing or moment connections. The structure should be designed to accommodate a notional horizontal load of 6% of imposed load, acting at deck level, together with a nominal load should be applied for air pressure (0.15 kN/m<sup>2</sup>). In addition, each element of the stand should be capable of resisting a horizontal load of 0.75kN, applied at 1.5m above ground floor level
5. Stair calculations should assume a live load of 5 kN/m<sup>2</sup>. Stair dimensions vary depending on the number of risers, details can be found in the venue / event regulations.
6. Handrails / upper deck containment walls should be designed to resist a horizontal load of 1.5 kN/m run at a height of 1.1m. Infill panels should be constructed using either solid material or vertical bars, horizontal bars or wires are not acceptable.
7. Stanchion baseplates should be a minimum of 300 x 300 x 12 and tied together using straps to prevent spreading of the baseplates, if not then a calculation should be provided to justify their omission. No fixings are normally permitted to the venue floor.
8. Submission of information should be in the form of drawings and calculations, not photographs or rough sketches, as it is not possible to assess the structure without details of the stand. Drawings should contain enough details to show exactly how the stand will be constructed including baseplates, joint construction, support details etc.
9. All steelwork connections are to be bolted, site welding is not permitted.
10. All details and calculations are to be submitted to the organiser / venue at least 28 days prior to event build. Acceptance of the designs does not imply that the stand is fit for purpose and this remains the responsibility of the exhibitor / designer / contractor.