

CAST CONNEX | CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

ABOUT THE COMPANY

CAST CONNEX is the world leader in the design and delivery of structural steel castings for buildings and bridges. Their products include pre-engineered connectors that simplify the design and enhance the performance of structures. They also offer design-build services for custom cast steel nodes and components. Find more at: www.castconnex.com

Notable projects include Sphere, Las Vegas, One Bloor West, Apple AC2 Pergolas, Queen Richmond Centre West, Salesforce Transit Center, Vancouver International Airport, PENN 2, 30 Hudson Yards, Academy Museum of Motion Pictures, Bermuda Airport, Charlotte Douglas International Airport, Austin International Airport, NASA Mobile Launcher 2, Xujiahui Center Canopy, Emory University Hospital, Frances Appleton Pedestrian Bridge, 3 WTC, CIBC Square II, USTA Arthur Ashe Tennis Stadium, and Whitney Museum of American Art.

COURSE DETAILS

Course Title: Steel Castings for Enhanced Performance of Structures

CAST CONNEX is the world leader in the design and delivery of structural steel castings for buildings and bridges. Their products include pre-engineered connectors that simplify the design and enhance the performance of structures. They also offer design-build services for custom cast steel nodes and components. Find more at: www.castconnex.com

LEARNING OBJECTIVES

1. Understand the Fundamentals of Cast Steel Components

- Understand what structural steel castings are, and how they differ from wrought steel .
- Recognise the key stages of the casting manufacturing: starting with tooling and mould creation, followed by the casting process, including chemical composition and steel grade selection, and finally the post-processing treatments, such as heating-cooling and machining to refine as-cast steel into a final, specification-compliant product.

2. Evaluate Performance Advantages

- Understand how steel castings can be used to optimise structural performance, simplify complex geometries, enhance architectural expression and facilitate fabrication and construction.
- Assess when steel castings can offer advantages in terms of strength, durability, fatigue performance, cost-effectiveness, constructability or/and aesthetics.

3. Learn How to Specify Cast Steel Products

- Review and adequately be able to select standardized (pre-engineered) products in accordance with product datasheets and installation guides.
- Understand why and how to specify both standardized and project-specific custom steel castings in drawings and project specifications, including considerations such as surface finish/treatment or fire protection.

4. Collaborate Effectively with a Casting Designer-Supplier

- Understand the roles/responsibilities of a casting designer-supplier in the procurement of custom castings as well as the relationships with other stakeholders during design and construction stages.

REGULATORY, TECHNICAL & SUSTAINABILITY ASPECTS COVERED

Relevant Standards & Regulations

- Eurocodes and British Standards, including EN 1090, EN 10340, EN ISO 15614.
- CE marking for structural castings and associated documentation.
- CDM (Construction, Design & Management) implications.

Sustainability & Environmental Considerations

- Environmental Product Declarations (EPDs) for structural cast steel connections.
- Considerations for embodied carbon in steel castings vs fabricated connections.
- Opportunities for material efficiency and waste reduction, following whole life cycle considerations (e.g. re-use of tooling and moulding, production with recycled steel scrap, end of life)
- Reduced susceptibility to failure of coating system due to gentle geometric transitions, providing enhanced service life.
- Increased service life in fatigue-critical applications.

Design Responsibility & Risks

- Engaging a Casting Designer-Supplier (CDS) early in the process helps reduce design and construction risk by ensuring clear responsibilities and seamless coordination from concept through to installation.
- Castings eliminate complex, weld-heavy fabrication and benefit from a highly controlled manufacturing process – reducing on-site work, improving safety, and enhancing constructability.
- Optimal and less-effective use cases for cast steel connections.
- Foundry quality control, inspection and testing regime (e.g. non-destructive examination and testing).

Longterm Maintenance & Lifecycle Performance

- Surface finish, fire resistance and surface treatment.
- Fatigue performance and opportunities for performance-based design.
- Lifecycle durability and minimal maintenance advantages.

Ethical Considerations

- CAST CONNEX partners with certified foundries (CE marked) to ensure ethical production and traceable quality.



www.castconnex.com



info@castconnex.com



+44 20-3987-7691

+44 80-8196-8162 *(Toll-Free)*