

CASSSC Structure and Specification Sheet

Minimum Specification

Enclosed Dimensions	9 x 4.5 x 4.5 metres
External Dimensions	9.22 x 4.72 x 4.72 metres
Maximum Contained Mass	60 tonnes (uniformly distributed across loaded side face)
Total Empty Mass	10 tonne
Stacking Load	13 CASSSC stack under Earth gravity, with load passing through corner posts of CASSSCs
Materials	Aluminium or Steel Alloy
Pressurisation	Pressurised CASSSCs must contain a 1 bar pressure whilst full and exposed to vacuum
Minimum Safety Factor	2.0

Example CASSSC Structure

The standard structure of a CASSSC can be seen in Figures 1 and 2 (below). The structure consists of a welded framework of aluminium or steel beams and cross members, with orthogrid sidewalls. Gaskets are used for sealing of pressurised containers. Sidewalls are joined to the frame using a combination of fasteners and/or welding techniques, depending on the manufacturer.

Part Dimensions - Corten Steel

Top Side Rail, Bottom Side Rail	100x100x15 mm box section, 9100 mm length
Top End Rail, Bottom end Rail, Door Header, Door Sill	80x80x12 mm box section, 4600 mm length
Corner Post	110 mm square bar, 4500 mm
Cross member	Not utilised for modern CASSSC designs due to integration with sidewall panel orthogrid structure. Older designs used 80x35x10 mm pieces spaced 1000 mm apart (skipping location with forklift pockets)

Forklift Pockets	400x150x20 mm C-Shaped Section, 4500 mm, located centrally along each sidewall, 3000 mm apart
Corner Fitting	200 mm box, with appropriate cut outs. Additional reinforcement at joints with side and end rails
Sidewall Panel, Endwall Panel, Roof Panel, Floor Panels, Door Panels	Single orthogrid panels, 50 mm peak thickness, pockets of 45 mm depth and 360 x 450 mm length with 48 mm separation, additional cutouts to fit around cross members as necessary
Hinges	Stamped 10 mm pieces
Door Locking Bars	30 mm rod with cast end attachments for locking

All part dimensions are nominal, but reasonable manufacturing tolerances are acceptable. Figures below show the key structural elements of the CASSC.

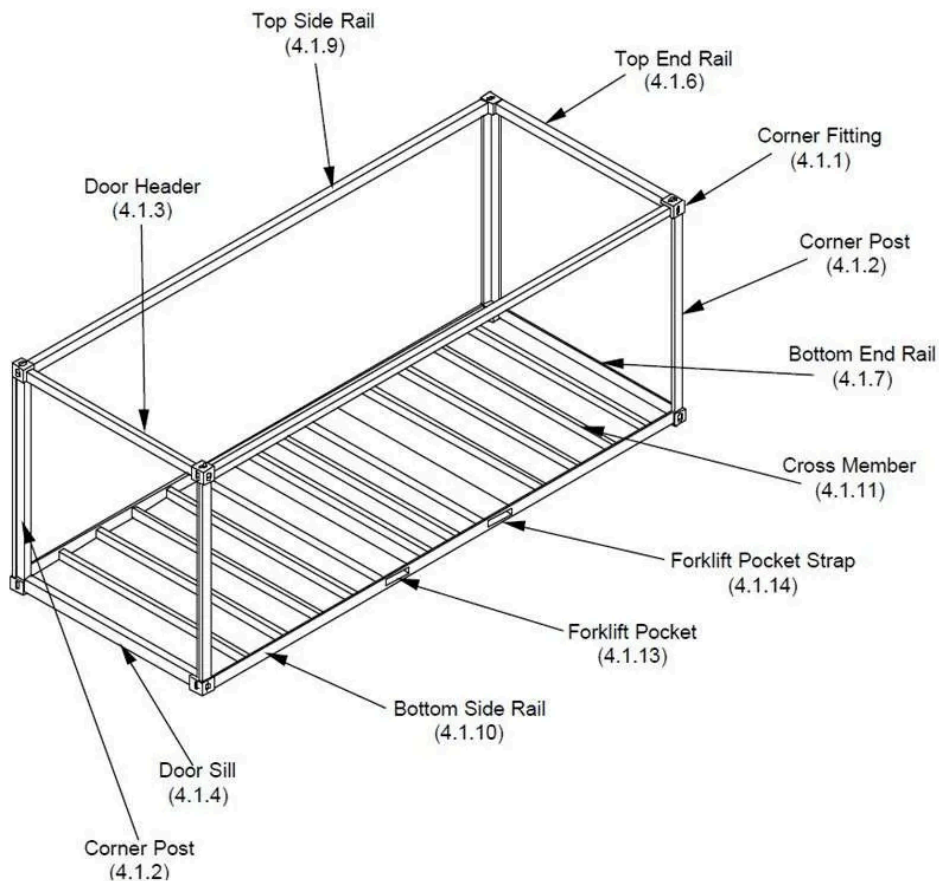


Figure 1: Main framework of the CASSC. Image credits: Robert Wheeler, 2022, Anatomy of a Shipping Container, <https://www.shippingandfreightresource.com/anatomy-of-a-shipping-container/> [Accessed 03/10/2024]

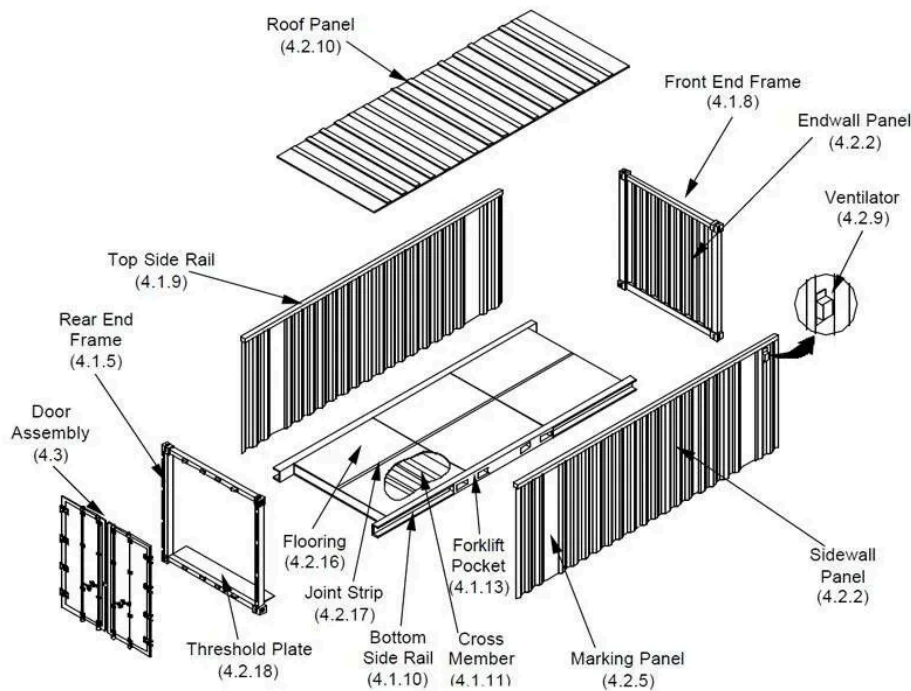


Figure 2: Exterior components of the CASSSC. Image credits: Robert Wheeler, 2022, *Anatomy of a Shipping Container*, <https://www.shippingandfreightresource.com/anatomy-of-a-shipping-container/> [Accessed 03/10/2024]

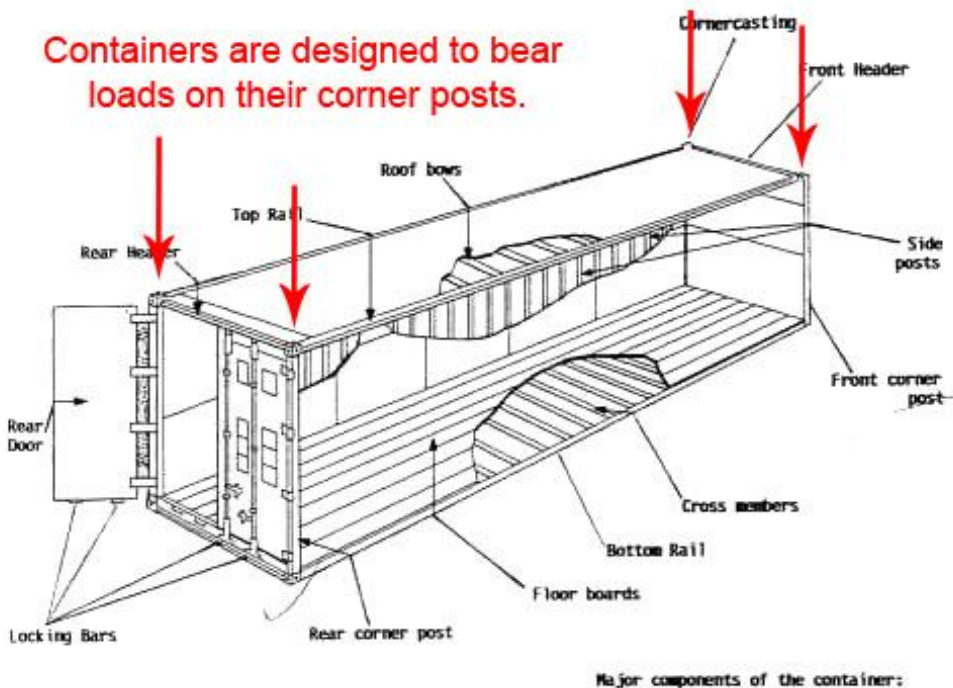


Figure 3: Stacking load diagram for a CASSSC in transport or storage. Image credits: Containers40, 2015, *Container Technical Sheet*, <https://containers40.com/2015/05/16/fiche-technique-container-40-pieds/> [Accessed 03/10/2024]