

Transport System using SAFETAINER Package Design N° 2913



System

The SAFETAINER 2913 transport system provides pallets for drum handling, a rail based roller conveyor system to load pallets, a SAFETAINER container to meet regulatory requirements for transporting radioactive materials, and a trailer which provides tie-down for the SAFETAINER for transport and a forkable loading platform to assist pallet loading.

The above photograph shows the complete SAFETAINER transport system for a 20' SAFETAINER (SAFETAINER shown is design number 2896). The door is shown in open position. A stack of pallets can be seen within the SAFETAINER.

SAFETAINER Certification

The SAFETAINER 2913 is designed as an Industrial Package Type 2 (IP-2) in accordance with the IAEA Regulations for the Safe Transport of Radioactive Material TS-R-1 and as such meets all normal conditions of transport requirements.

The SAFETAINER 2913 is designed to meet the strength testing requirements of the applicable ISO freight container standard requirements and is approved on manufacture as meeting the International Convention for Safe Containers (CSC) requirements.

The SAFETAINER 2913 is licensed by Croft Associates Ltd as an Industrial Package Type 2 (IP-2).

A similar (20') package, fitted with insulation, has been approved in the UK for shipment of Type B quantities of Pu wastes under Special Arrangement.

SAFETAINER Description

The SAFETAINER 2913 is a large volume reusable container for the transport of bulk quantities or large items of Radioactive Material.

The container is constructed from mild steel and has a large door at one end. The door is closed by a hydraulic closure system, and secured with a mechanical locking mechanism. The closure system can be manual (hand operated pump) or powered with an air driven pump. The container is finished inside and out with a durable paint finish for corrosion protection. The 2913 design is provided with a stainless steel lining.

Insulation can be added to give fire protection to prevent damage to the containment system in the IAEA Type B fire test.

The container floor incorporates anchorage points to suit a range of standard handling/tie-down equipment to suit customer needs.

Where the standard pallet system is used, a pair of I beams are fitted longitudinally to the floor of the container to effect tie-down of the pallets.

Trailer

The trailer used in the SAFETAINER 2913 transport system, is a standard skeletal-type trailer (fitted with twistlocks), used for the transport of 20' ISO freight containers. A moveable platform is added to the rear of the standard trailer: this platform has to be lowered to allow the SAFETAINER door to be opened and closed. The platform also facilitates loading pallets using the JOLODA roller conveyor system. The platform is raised and lowered using the air suspension system fitted to the trailer.

Pallets

The pallet system is designed to carry 6 drums in one layer ('6 pack') or 12 drums in 2 layers ('12 pack'). The pallet system consists of a base unit, top unit and, for 12 pack operation, a mid unit which locates on top of the lower 6 drums.

The pallet system is tied together by tensioning strips from the top unit to the base unit.

The pallet system is tied down to the SAFETAINER by a pin locking system fitted to the pallet that engages heavy duty pins (fitted to the pallet) into the two I beams fitted to the floor of the SAFETAINER.

Roller Conveyor System

The SAFETAINER 2913 is fitted with a JOLODA roller conveyor system which uses rails loosely pegged to the SAFETAINER floor and two portable skates. The JOLODA roller conveyor system operates by jacking the pallet off the floor using the hydraulic system fitted to each skate, allowing a loaded pallet to be pushed manually into the SAFETAINER.

Containment

SAFETAINER 2913 is a resealable containment vessel leak tested on manufacture. The door is fitted with a double seal (incorporating an interspace) and a seal test point. The door seal can be leak tested in approximately 15 minutes). The body is leak testable at periodic maintenance verification as well as at manufacture.

The containment system provides absolute containment to particulate contents by the combination of the leak free body, leak free door seals, and HEPA filter fitted to the door. The HEPA filter prevents pressure difference developing across the containment boundary and thereby prevents pressure drive thus ensuring there can be no particulate leakage from the container.

Approved Contents

Radioactive material categorised as Low Specific Activity (LSA) and/or Surface Contaminated Objects (SCO).

Type B quantities of Pu contaminated wastes (approvable under Special Arrangement).

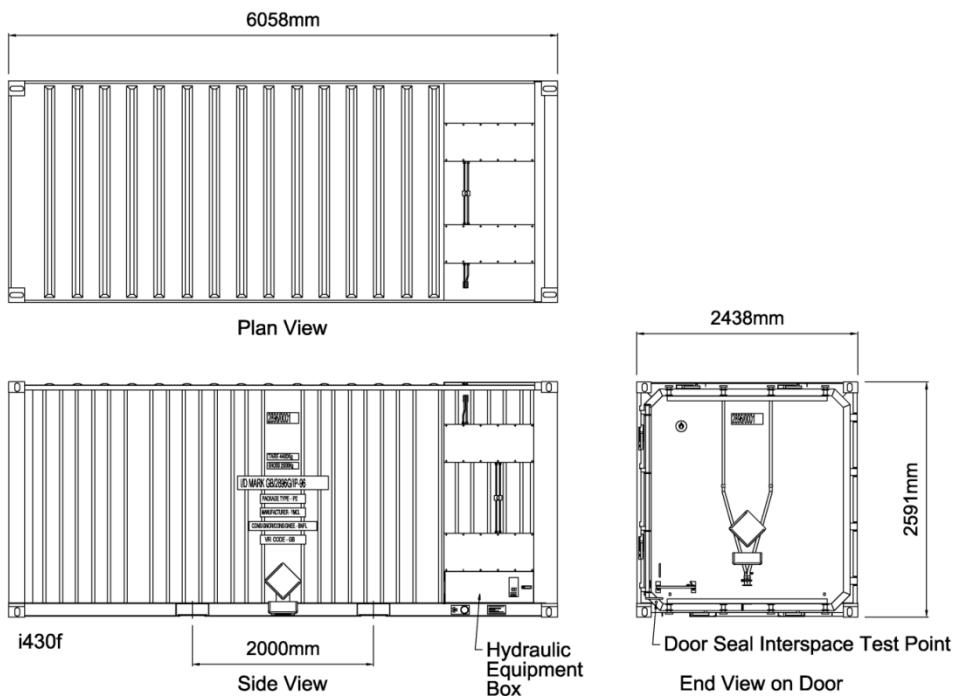
Modes of Transport

Road.

SAFETAINER Design N° 2913



Illustration of SAFETAINER 2913



Physical Data

SAFETAINER 2913

Height	2.591m (8' 6")
Length	6.058m (20')
Width	2.438m (8')
Internal Length	5.848m (19' 2")
Internal Door Height	2.260m (7' 5")
Internal Door Width	2.080m (6' 9")
Tare Weight	4.4 tonnes
Gross Weight (with contents)	25 tonnes
External Volume	38m ³ (1360 ft ³)
Closure	Single door at the end of the container, fitted with a closure system, locking mechanism and double seal.

Trailer for SAFETAINER 2913

Bed height	1.140m (3' 9")
Bed length	7.92m (26' 0")
Bed width	2.44m (8' 0")
Tie-down system	Twistlocks
Tare Weight	5.0 Tonnes

Pallets

Standard Pallets for 6 or 12 drums

Length	1.351m (4'5¼")
Width	1.893m (6'2½")
Height with 1 layer of 55 gal drums	1.300m (4'3")
Height with 2 layers of 55 gal drums	2.214m (7'3")
Number of standard pallets	4

Non-Standard Pallets

Non-standard pallets can be provided if required.

Non-palletized Items

Large heavy items can be carried without pallets: the container has provisions for tie-down of large heavy items.

Variations

The container design can be varied to meet specific requirements - subject to a safety review. It can also be manufactured from other suitable materials eg, stainless steel or corrosion resisting mild steel.

Further Information

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