
ARE YOU AT RISK WHEN USING A UN FIBC AS A 'SELF-APPROVED' CLASS 7 TYPE IP-1 TRANSPORT PACKAGE?

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End users may be at risk when using a 'off the shelf' UN FIBC as a self-approved Type IP-1 transport package for a LSA-I / SCO-I categorised radioactive materials. The error often made is the design certification is not checked properly, and the test contents may not reflect the actual intended contents of the end user.

The testing of a UN FIBC requires a series of tests to demonstrate 'sift proof' and no dispersal of contents, the tests include drop/topple tests and a top lift test. The principal simulant fill material used by most test facilities around the world is polypropylene granules or similar, with additional weights to achieve a top lift test at the required SWL safety factor. The simulant test material most commonly used to achieve UN certification of an FIBC clearly presents a risk when using the FIBC for materials of greater density or for materials which present a risk of puncture, such as demolition type of materials.

“If you are using a UN design certified FIBC as a 'self-approved' Type IP-1 package for Class 7 materials, you could be at risk as the UN FIBC may not be 'fit for purpose' for the packaging and transport of your Class 7 materials.”

ADR Class 7 and the associated IAEA regulations for the Safe Transport of Radioactive Materials, SSR-6, provides guidance that all packages including 'Excepted' and Type IP-1 packages are designed and demonstrated as being fit for purpose for a minimum of 'Routine Conditions of Transport' (RCT), i.e. incident free, and that a package selected is in fact fit for purpose for the nature of the contents to be carried. If the contents could also include materials with other dangerous properties, an FIBC must also undergo the required tests prescribed in ADR for FIBC design and testing, which allows the competent authority representative to assign a UN code for designating packages, e.g. 13H4/Y/..... These requirements bring in tests for what would be considered 'Normal Conditions of Transport' (NCT), i.e. minor mishaps. These tests shall be considerate of the materials to be transported which the manufacturer is aiming for.

If you are using a UN design certified FIBC as a 'self-approved' Type IP-1 package for Class 7 materials, you could be at risk as the UN FIBC may not be 'fit for purpose' for the packaging and transport of your Class 7 materials.

ADR and SSR-6 both state that the package must be suitable for the intended contents. To this end, it is prudent to always check an FIBC's (or any package's) design certificate to understand what the test contents were and whether these are representative of those you intend to transport.

Responsibility remains with the end user to ensure the goods to be packaged have equivalent properties to the materials used in the testing of the FIBCs and the Packing Instructions listed against the UN number assigned to the goods does allow the use of FIBCs. This would require the end user to consult their DGSA for advice and guidance. A prime example is loading radioactively contaminated building debris into an UN FIBC that has only been tested with lightweight homogenous media, i.e. the polypropylene granules. This introduces the risk of puncture and dispersal of contents due to the heavy or sharp debris as the FIBC is not designed for it.

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References.

IAEA SSR-6 Regulations for the Safe Transport of Radioactive Material 2018 Edition, Requirements for Industrial Packages, para 613,

“The package shall be capable of withstanding the effects of any acceleration, vibration or vibration resonance that may arise under routine conditions of transport without any deterioration in the effectiveness of the closing devices on the various receptacles or in the integrity of the package as a whole...”.

IAEA SSG-26 Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition). Section VII, Test Procedures, Demonstration of Compliance, part of para 701.5

“...If simulated radioactive contents are being used, these contents should truly represent the actual contents in mass, density, chemical composition, volume and any other characteristics that are significant. The contents should simulate any impact loads on the inside surface of the package and on any closure lids...”