

ENGINEERED STORAGE PRODUCTS COMPANY

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Design Life – Aquastore® and TecStore™ Pre-Engineered Steel Storage Tanks

With the advent of the American Water Works Association Standard ANSI/AWWA D103 specification in 1980, pre-engineered steel bolted tanks became fully recognized and accepted as "permanent storage" with equal standing to site welded and concrete tanks. In the 1987 release of the standard, the following information appears in the Forward (page vii, ANSI/AWWA D103-87):

"Tanks with factory-applied coatings and bolted construction have a life expectancy in excess of 40 years, assuming that coatings are not abused or damaged by external causes. Tanks that were installed more than 50 years ago with factory-applied coatings are still in service."

Pre-engineered steel bolted tanks follow very similar design codes as compared to site welded (field coated) tanks. Pre-engineered tank design is every bit as stringent as welded tank design, and pre-engineered tanks have the added advantage that structural integrity is guaranteed in the factory rather than in the field. The pre-engineered tank provides factory designed structural integrity evidenced by the visual simplicity of "a bolt in every hole", whereas field quality control is a significant (and oftentimes uncontrollable) concern with site welded and concrete tanks. Additionally, factory applied fired and/or baked on coatings offer significant quality and performance advantages over field applied coatings.

British Standard 7543:2003 (Guide to Durability of Buildings and Building Elements, Products and Components) provides information regarding the assessment of service life based on the product components, and we confirm that the components used in our sectional steel tanks will provide a predicted minimum 50 year design life in accordance with this standard.

A "design life" of 50 years can best be specified by requiring the tank to be factory coated in accordance with the AWWA D103 standard Section 10.4 (Glass Coatings), Section 10.5 (Thermoset Liquid Suspension Coatings), or Section 10.6 (Thermoset Powder Coatings). These coatings, in conjunction with a routine maintenance program as outlined in AWWA M42 (Manual of Water Supply Practices – Steel Water-Storage Tanks), Appendix C (Inspecting and Repairing Steel Water Tanks, Standpipes, Reservoirs, and Elevated Tanks for Water Storage), will provide many years of safe and satisfactory service.