

MIL Spec. / Marine Compliant K-Flex Insulation Materials

MIL-P-15280J / EB 4013

For many years, MIL-P-15280J was the primary specification used by the U. S. Department of Defense to specify the requirements for chemically expanded unicellular elastomeric plastic foam materials that were used as thermal insulation. Electric Boat (EB) Specification 4013 replaced MIL-P-15280J for new shipboard applications. MIL-P-15280 has gone through several revisions, each revision superceding the last. The J revision is the latest revision. Mil-P-15280J lists requirements for the following properties: density, compression resistance, water absorption, compression set, dimensional change, oil resistance, tensile strength, elongation, thermal conductivity, odor, and fire performance.

Products meeting the requirements of MIL-P-15280J are listed on the Qualified Products List (QPL) and must be recertified every 18 months. K-Flex USA elastomeric insulation products (INSUL-TUBE® and INSUL-SHEET®) are listed on the QPL.

EB 4013 should not be considered a revision of MIL-P-15280J since it is based on entirely different test performance criteria. The intent of the EB specification was to develop a specification for a *non-halogen* material that met a large-scale fire test requirement. The U. S. Department of Defense has given Electric Boat authority over this specification. As such, there is not a QPL list for approved products. Approval comes from Electric Boat. K-Flex ECO® meets the requirements of EB 4013 and is listed as an approved material.

MIL-P-15280J will probably continue to be specified for several years as replacement materials for existing applications. Standard elastomeric insulation products will not meet the Electric Boat specification since they contain halogens. Likewise, K-Flex ECO® is not on the QPL list of qualified products for MIL-P-15280J. Hence, care must be taken to ensure the right material is specified for the application.

Insulation materials based on thermoplastic resin systems do not meet the requirements of MIL-P-15280 or EB 4013.

MIL-A-24179A Amendment 2 Type II Class 1

Contact Adhesives for Flexible Unicellular-Plastic Thermal Insulation

MIL-A-24179A is a Navy QPL specification for contact adhesives. It is not called out that often, but K-Flex® 373 Contact Adhesive is on the QPL list as a qualified product. The specification references a high initial strength, heat and water resistant, contact-type adhesive for bonding flexible unicellular-plastic thermal insulation to itself and to metal surfaces.

MIL-I-16562A

Insulation, Synthetic, Rubber –Chemically Expanded, Cellular (sheet form) for insulation purposes.

K-Flex Insul-Sheet is approved and meets the requirements of this standard.



IMO (International Maritime Organization) SOLAS Requirements

K-FLEX ECO® meets the SOLAS Requirements for:

- Combustion gas concentration
- Smoke density
- Heat release
- Flame spread

Elastomeric (limited combustibility) insulation is allowed on cold lines, condensate and drain lines not in the passenger compartments.

USCG (US Coast Guard)

The US Coast Guard follows the IMO regulations for use of elastomeric insulation on ships. In some situations, product has been allowed to be used in other applications on a ship-by-ship approved basis.