

Duplex Stainless Steel Manufacturers

Brafe Engineering, Woodbridge, Suffolk, UK Extent of Approval

Suppliers are qualified in accordance with GP 29-01-04 to supply material in accordance with GP 29-01-02

Extract from EMDC Duplex QML Rev. 12 - December 2009

NOTES

- 1) EMDC requires that all duplex and super duplex stainless steel materials shall be procured only from qualified suppliers. To become qualified, a supplier must have satisfied the requirements of GP 29-01-04.
- 2) This Qualified Manufacturers' List (QML) identifies those suppliers that have been assessed in accordance with GP 29-01-04 and found capable of supplying Duplex and Super Duplex material conforming to GP 29-01-02.
- 3) Manufacturers are qualified to supply the material grades, product forms, and sizes ranges as defined in the attached table.
- 4) Manufacturers are restricted to the use of the mandatory sub-suppliers listed in the attached table. A change in a mandatory sub-supplier shall invalidate the manufacturer's qualification.
- 5) The following product forms are covered by this Qualified Manufacturing List:
 - Bar (see note 7 below)
 - Castings
 - Fittings
 - Forgings (see note 7 below)
 - Induction Bends
 - Plate
 - Pipe (Seamless)
 - Pipe (Long Seam Welded - not spiral welded pipe)
 - Semi-finished Billet
- 6) Section sizes at final heat treatment in excess of 200 mm for 22 Cr duplex and 120 mm for 25 Cr super duplex are outside the scope of this document and shall be subject to approval on a case by case basis.
- 7) Flanges, elbows, bends, plates, discs, tees, valve bodies, headers and manifolds shall not be machined directly from forged or wrought bar. Forging shaping operations may be performed by hammering, pressing, piercing, extruding, upsetting, rolling, bending or by a combination of two or more of these operations. Small cylindrically shaped items may be machined from forged bar only with the express written approval of ExxonMobil
- 8) The evaluation for acceptance shall include a visit to the manufacturers and, where necessary, sub-supplier's premises to review facilities, systems, implementation of procedures and documentation as required by GP 29-01-04.

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9) EMDC accepts that certain manufacturing processes may be carried out by a sub-supplier. Under these circumstances EMDC reserves the right to carry out an assessment of mandatory sub-suppliers in accordance with GP 29-01-04. Also the supplier shall advise EMDC if there is a change in any mandatory sub-supplier. Mandatory sub-suppliers will be those which cover the following activities

- Supply of raw material
 - Supply of semi or part finished product
 - Manufacturing processes such as forming, forging, casting and welding, including weld repair.
 - Heat treatment
 - Laboratory testing services.
 - N.D.E. Services
- 10) During manufacture it shall be the manufacturer's responsibility to ensure that its sub-suppliers comply with the requirements of GP 29-01-02 and GP 29-01-04. Details of sub-suppliers will be made available to EMDC upon request.
- 11) The QML shall be revised and reissued to interested parties at frequency determined by EMDC.
- 12) EMDC shall monitor the performance of manufacturers and their sub-suppliers to ensure that the list of qualified manufacturer can be maintained.
- 13) The manufacturer and all sub-suppliers shall hold current accreditation to ISO 9000 or another recognized quality system acceptable to EMDC.
- 14) For general queries call Derek Horsburgh (+1 281 654 5507) or Geoff Dunn (+1 281 654 4870) EMDC, Materials Department, Greenspoint 6, Houston.

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Added / Updated Rev No.	Product Form (See Note 7)	Type of Material	Manufacturer	Standard and Grade	Qualified thickness/weight	Material form	Mandatory subcontractors & conditions
4	Castings	22Cr	Brafe Engineering, Woodbridge, Suffolk, UK	A 890 Gr 4A (J92205)	T < 100 mm No weight limit	Gravity sand castings	Testing to be by an accredited external laboratory acceptable to EMDC.
4	Castings	22Cr	Brafe Engineering, Woodbridge, Suffolk, UK	A 890 Gr 4A (J92205)	T < 45 mm 18 kg max weight	Repliwax (Lost wax process)	Testing to be by an accredited external laboratory acceptable to EMDC
4	Castings	25Cr	Brafe Engineering, Woodbridge, Suffolk, UK	A 890 Gr 6A (J93380)	T < 80 mm No weight limit	Gravity sand castings	Testing to be by an accredited external laboratory acceptable to EMDC.
4	Castings	25Cr	Brafe Engineering, Woodbridge, Suffolk, UK	A 890 Gr 6A (J93880)	T < 45 mm 18 kg max weight	Repliwax (Lost wax process)	Testing to be by an accredited external laboratory acceptable to EMDC.