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TECHNICAL REQUIREMENTS FOR SUPPLY OF STEEL PLATES ASTM A-516 gr. 70 OR EQUIV

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1. General

1.1 This specification covers technical requirements for the supply of hot-rolled steel plates.

1.2 Fabrication processes to be used are, rolling, cold or hot forming and fusion welding. Improved qualities such as forming, malleability and weld ability are considered essential.

1.3 Steel qualities: as specified in ASTM, according to the specific material designation.

1.4 Plating material shall satisfy the relevant latest edition of the ASTM standard or the ASME II part A. Equivalent steel qualities, having suitable chemical and mechanical properties, will be considered adequate substitutes. Equivalents shall have prior client's approval. No equivalent steel quality is allowed.
All steels ordered shall be produced in accordance with the latest edition and addenda or the relevant standard/spec.

1.5 If no otherwise stated, the steel making practice and heat treatment, shall suit the relevant standard requirements. The chemical composition and mechanical properties shall be within the limits indicated by the relevant standard and the supplementary requirements.
If not otherwise stated the conformance to the approved ASME/ASTM shall be met and shall include the following:
Steel making practice, heat treatment, chemical composition, metallurgical structure, surface and edge qualities, mechanical properties including impact testing at the specified temperatures, testing, marking and documentation.

1.6 The general conditions of delivery, such as. Mechanical testing and tolerances for gauge, flatness, length and width of this specification are related to ASTM A-20 and its applicable documents, and are considered as part of the relevant standard.
Flatness tolerances per table 4 of SA-20.
Thickness tolerances per table A1.1of SA-20.

1.7 As a rule, the mechanical properties such as yield strength, tensile strength, elongation and reduction of area, charpy V – notch and hardness are required and shall be represented by test specimen coupons removed from plating in the final heat treatment condition.
No variation from project specifications and this specification are permitted unless approved in writing by client.

2. SUPPLEMENTARY REQUIREMENTS

2.1 The maximum carbon content shall not exceed 0.23 percent. If the relevant standard specifies lower carbon content, the lower value shall be adopted.

2.2 Equivalent (Ce) shall not exceed 0.43 and shall be calculated with the following formula:

Carbon Equivalent (Ce) = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15 Higher carbon contents or Ce values will not be accepted without prior client approval.

3. CERTIFICATES

3.1 Manufacturer's certificate for compliance with the relevant standard and the client supplementary requirements showing test results data are required.
3.2 Test results referred to above shall be reported on Mill certificates.
3.3 If an outside inspection authority is not specified in the purchase order, the manufacturer will furnish three (3) copies of mill certificates approved by his own quality control department.
3.4 Mill test reports (mill certificates) shell be of type 3.1 of EN 10204 and as a minimum shall include the followings:

- Steel producer details
- Steel producer marl as die stamped on the plates
- Heat no., slab or test no.
- Nominal thickness.
- Year (edition & addenda) of the spec. to which the plates are produced.
- Original gage length of tensile specimens.
- Heat treatments details.
- All mechanical test results including impact values and temperatures, bend tests.
- Statement per clause 19.5 of A/SA-20 (ED 2007).

4. MARKING

Marking shall be carried out as stated in ASTM A-20 & A-435 and shall as a minimum include the following die stampings:

- ASME/ASTM designation (spec. no. & grade & class)
- MT for heat treatment
- Heat no. and test or slab no.
- Steel producer marking
- The required marking shall be applied in two locations for each plate at least 300 mm from the edges of the plates.
- Order no.
- Dimensions
- Item no.
- UT test details and results

5. PACKING

5.1 Plates 8 mm and over in thickness to be shipped loose.
5.2 Plates to be protected against mechanical damage.
5.3 Plates to be wrapped with plastic sheet to protect from sea water and/or sea atmosphere.

APPENDIX "A"
SITE CONDITIONS

– Plant is located	:	"PEI" located in oil dock, ISRAEL in a corrosive (near the sea) atmosphere.
– Elevation	:	approx. 10 m above sea level
– Ambient temperatures	:	maximum 40°C, MINIMUM 0°C
– Relative humidity	:	maximum 100% , MINIMUM 33%
– Earthquake loading according to Israel standard 413	:	the ground acceleration factor Z shall be equal to 0.1 G

APPENDIX "B"

Description: Bottom plate or EQUIV

Material: A-516 70, AS E355; BY EN10025