SPECIFICATION:

FOR STRUCTURAL STEEL
ANGLES, CHANNELS, PLATES, STEEL RODS,
FLAT PROFILES AND STRIPS

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(- Signed)

Approved by: Eng. Y. Samoocha
(- Signed)
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#### Appendices:

1. **Standard specification for quality control Q-APP-02.**
1. GENERAL

This specification deals with the requirements of the Israel Electric Corporation pertaining the supply of Structural steel: angles, channels, plates, steel rods, flat profiles and strips for the manufacture of towers and various structures.

This specification defines the manufacturing characteristics required as well as requirements pertaining to dimensions and to delivery, shipping marks, bundling, quality control and the documentation required for the publication of the tender, and upon placing an order.

In case of discrepancies or non-conformity between the documents, priority shall be as follows: The present specification; The DIN, EN.

2. THRESHOLD CONDITIONS:

Acc. To the attached documents of the supply and storage division.

3. DOCUMENTS FOR THE PROPOSAL

3.1 Valid ISO 9001 certificate as defined in the threshold conditions.

3.2 Declaration indicating that the proposal fully satisfies the requirements of this specification.

3.3 The name and origin country of the manufacturer of the steel, which is proposed by the bidder.

3.4 The bidder will fill a summary table (for each bid).

<table>
<thead>
<tr>
<th>Item no. acc. Bid documents</th>
<th>Type of steel</th>
<th>Manufacture Standard dimensions (para.4)</th>
<th>Applicable Tolerance mm (para. 5)</th>
<th>Structural steel designation standard (para.6)</th>
<th>*Si (%) contents 0.12-0.25 or less than 0.04</th>
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* Not valid for Galvanized strip sheets.
4. MANUFACTURING STANDARDS –dimensions, shape & tolerances

The dimensions and tolerances of items must conform to the following standards:

4.1 Angle Iron

Hot Rolled Round Edge Equal Angles - according to DIN 1028, EN 10056.

Hot Rolled Round Edge Unequal Angles - according to DIN 1029, EN 10056.

4.2 Channel Profiles

Hot Rolled Round Edge/Channels - according to DIN 1026, EN 10279.

4.3 Flat Profiles and Strips

Hot Rolled Flat Steel for General Purposes 5/10-60/150 - according to DIN 1017-1.

Hot Rolled Wide Plates 5/150-60/1250 - according to DIN 59200.

Hot Rolled Strips, Hot Rolled Sheets 0.8/10-10/120 - according to DIN 1016, EN 10048.

4.4 Plates

Hot Rolled Plates (3 mm to 150 mm thick) - according to DIN 1543, EN 10029.

Cold Rolled Plates under 3 mm thick - according to DIN 1541, EN 10131.

4.5 Steel Rods

Hot Rolled Round Steel for Special Purpose - according to DIN 1013, EN10060.

Hot Rolled Squares for General Purpose - according to DIN 1014, EN 10059.
4.6 Galvanized strip sheets with thicknesses of 0.35 mm to 3.0 mm

Continuously hot dip coated strip and sheet of low carbon steels for cold forming - according to DIN EN 10143.

5. LENGTH TO BE SUPPLIED AND APPLICABLE TOLERANCE

5.1 Steel Angles from steel RST 37-2 in 6 m. length.
Tolerance: up to L50X50X5 include. - ± 100 mm.
from L60X60X6 - + 100 mm/-0 mm.
angle L60X40X7 - ± 100 mm.

5.2 Steel Angles from high quality steel St 52-3 in 6 m. and 9 m.
Lengths tolerance: + 100 mm/-0 mm.

5.3 Channels in lengths of 6 m., 8.5 m., 9 m. and 12 m.
Tolerance: + 100 mm/-0 mm.

5.4 Flats and Strips in lengths of 3.0 m., 3.5 m. and 4.0 m.
Tolerance according to above listed standards

5.5 Plates

Width of plates: from 1 m till 2.5 m.
In lengths as specified in the order.
Tolerance according to above listed standards.

6. MATERIAL - STRUCTURAL STEEL DESIGNATION STANDARD

Designation of steel will conform to German Industry DIN 17100, DIN EN 10025 – part 1,2. (“Steel for General Structural Purposes”).
The steel will be “suitable for hot galvanizing”.
Steels are to have Si contents less than 0.04% or from 0.12 to 0.25%.
Designation of steel

All items:

Steel RST37-2 :
According European standard - EN10025:2004 comparable to steel S235JR

Steel ST52-3N :
According European standard - EN10025:2004 comparable to steel S355JO+N

For Hot Rolled Round Edge Equal Angles possible to offer:

Steel ST52-3U :
According European standard - EN10025:2004 comparable to steel S355JO

Galvanized strip sheets with thicknesses of 0.35 mm to 3.0:

Steel DX51D+ Z - according DIN EN 10326 or DIN EN 10346.

Cold rolled plates under 3 mm thicknesses :

Steel DCO1 - according DIN EN 10130.

7. PACKING

All items to be sorted and tied into bundles of equal thickness, width, length and material
Maximum weight per bundle shall not exceed 2,500 kg.

For angles and channels The number of pieces per bundle package will be less than 25 units. The bundles that have more than 25 units need permission from Israel Electric Corporation.
Bundles of angels of 6 and 9 m lengths are to be secured in at least three places with double 6 mm. thick steel wire bindings.
Bundles of channels 8.5 m., 9.0 m. and 12 m. lengths are to be tied in at least four places with double 6 mm. thick steel wire bindings.
Steel sheets and plates with thickness under 3 mm will be packed on platforms (consisting of deck boards and runners) and secure with double 6 mm. thick steel wire bindings. Deck boards shall be equal in length to full width or length of the unit and shall have a min. thickness of 25 mm.

Steel sheets and plates with thickness above 3 mm will be packed and secure double 6 mm. thick steel wire bindings.

A plastic or metal tag with the following details must be attached to every bundle:

1. Name of item
2. IEC catalogue number
3. Steel quality
4. Name of Manufacturer
5. Number of items per bundle
6. Dimensions of items (thickness, width, length and tolerance)
7. Purchase order no.
8. Weight of bundle

8. MARKING

ST 52-3 Steel to be distinctly marked. Marking to be effected by clear painting on item reading: “ST 52-3” or by painting the end of the profiles with white paint.

9. QUALITY ASSURANCE

Manufacturer Quality Assurance Program shall meet the requirements Described in para 2.

10. QUALITY CONTROL

Quality control requirements will be according to I.E.C standard Q-APP-02.

11. DELIVERY APPROVAL CONDITIONS

Before the shipment, the supplier must furnish original mill Certificates as per DIN 50049, DIN EN10204 with respect to the chemical composition of the steel, its strength and elongation as per DIN 17100, DIN EN 10250 part 1,2., DIN EN 10327.
In addition the Israel Electric Corporation reserves the right to carry out quality acceptance tests either at the manufacturing mill or on arrival of steel at IEC stores.

These tests will be decisive as to the quality of the shipment, and its acceptance or rejection.

These test do not release the supplier from any responsibility regarding the quality of the material supplied, or any other discrepancies from defined requirements in this specification.

In the event that the supplied steel fails to conform to IEC requirements, the local representative will be invited to propose a solution.

Additional expenses, if any, will be borne by the supplier and not by I.E.C.
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<th>Edition no.: 17</th>
<th>Specification K 2580</th>
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12. **REVISIONS**:

1. Page no. 4 - para. 3.4 - added plates according to DIN 1543 (12/88).

2. Page no. 4 - para. 4.3 - added new channel 9 m length (5.10.89).

3. Page no. 1 - changed the name.
   - Page no. 2 - Changed the names of para. 5 and para. 6.
   - Page no. 3 - added the quantity of silicon.
   - Page no. 5 - additional comments.
   - Revision dated October 1990.

4. Page no. 3 - para. 2 - alteration of galvanizing requirements and silicone contents.

5. Page no. 5 - quality assurance requirements were removed adherence to the
   - “Standards Quality Assurance Requirements” 02-1G wad added.

6. Page no. 5 - quality assurance requirements were removed adherence to the
   - “Standards Quality Assurance Requirements” 03-1A wad added. Revision dated

7. Page no. 6 - added technical documents to be submitted by the bidder with the date

8. Page no. 5,6 - added requirements according ISO 9002.

9. Revision in Hebrew version of spec. Added silicon quantity in summary table of

10. Revision of silicon quantity in para.2 and para.7.
    - Added type of steel comparable to europian standard EN10025, EN10027.

11. Changed type of steel comparable to europian standard EN10025, EN10027
    - Revision dated November 1998.
12. Add requirements for ISO in para.2.
Specification was overwriting according a new format.

13. Removed the demand that number of pieces per bundle package is to be equal and in multiples of 10 units (for light profiles) and 5 units (for heavy profiles). Para.7. Threshold conditions removed from specification to the attached document Para.. 2
Revision dated July 2005.


Revision dated December 2009.

16. Added Galvanized strip sheets with thicknesses of 0.35 mm to 3.0 mm. Changed the ST 52-3N comparability to EN 10025:2004 (Page 6.). ISO was formulated newly. Added demands for packing.
Revision dated March 2011.

17. Added material DC01 for Cold rolled plates under 3 mm thicknesses - according DIN EN 10130.
Para.6
Revision dated September 2011.