

## **BUYER'S GUIDE FOR EOT CRANES**

This Guide, which is developed by the “**Reva Industries Ltd.**” is a renowned world leading Crane manufacturing company, serving a broad range of customers, including manufacturing and process industries, automobile plants, engineering industries, process plants, infrastructure projects (construction, power, metro rail, shipyards, steel, etc.) and in thousands of SMEs. Regardless of your lifting needs, **REVA** is committed to providing you with lifting equipment and services that increase the value and effectiveness of your business. We have always been dedicated to improving efficiency and performance of businesses in all types of industries. And we have done this by continuously providing lifting equipment and services people can trust & made **REVA** a known name on the world Map.

“**Reva Industries Ltd.**”, provides guidance about the proper selection of crane and hoist systems and covers various issues about such a system's terminology, usage, classification, performance, environmental requirements, special requirements and more. It was developed with the sole intent of offering information to parties engaged in selecting and purchasing such a crane or hoist system. This Guide is advisory only and should only be regarded as a simple tool that a potential user or buyer may or may not choose to follow, adopt, modify, or reject.

For more information or for the technical queries/doubts can be contacted at [reva@revacrane.com](mailto:reva@revacrane.com).

**While preparing this Guide assistance has been derived from various Indian standards (IS:3177, IS:807, IS:13834(Part-1 & 5 etc.) to bring this guide in line with the buyer's requirements.**

**Considered Indian Standard as below :**

- **IS:3177-1999** is the Indian standard for Code of practice for Electric Overhead Travelling Cranes and Gantry Cranes other than steel work
- **IS: 807-2006** is the Indian Standard for the Design, Erection & Testing (Structural Portion) of Cranes and Hoists – Code of practice.
- **IS:13834-1994(part-1)** is the Indian Standard for Cranes — Classification (General)
- **IS:13834-1994(part-5)** is the Indian Standard for Cranes — Classification (Overhead Travelling & Portal Bridge Cranes)



**VERIFY FOLLOWING KEY COMPONENTS WITH YOUR CRANE SUPPLIER**  
**BEFORE PLACING ORDER:**

1. Is crane designed as per Code of practice for Electric Overhead Travelling Cranes and Gantry Cranes other than steel work (IS:3177-1999 latest) ?  
Yes/No
2. Are the Design stresses in accordance with IS:807 ?  
Yes/No
3. Welding – Design, Fabrication, Testing and Welder Qualifications in accordance with ASME Section IX?  
Yes/No
4. Are static/dynamic/Horizontal factors as per clause no.6, IS:807  
Yes/No
5. Are Loading Condition and Load Combinations as per clause no.-7.3.2, IS:3177  
Yes/No
6. Are calculated stresses within the limitations / guidelines of Section 3.4 ?  
Yes/No
7. Have the allowable stress ranges based on as per clause-9, IS:807 ?  
Yes/No
8. Girder design – Proportional requirements, Factors of Safety on Buckling consistent with IS:807?  
(See Clause-25.1 & 25.2, IS:807 )  
Yes/No
9. Is the girder deflection as per the requirements of IS:807, which requires Max. vertical deflection of the girder produced by the dead load, the weight of the trolley and the rated load shall not exceed 1/750 of the span of the Crane (If the span of the cranes is more than 12m), and 1/600 of the span (if the span of the crane is less than 12m) ? (See Clause-20, IS:807)  
Yes/No
10. Ratio of Crane Span to End Carriage Wheel Base as per the requirements of IS:807 ?  
(See Clause-24.1, IS:807)  
Yes/No
11. Bolting – Are structural bolted joints designed in accordance with IS:807 requirements? (see A-1, Annex-A, IS:807)  
Yes/No
12. Load suspension parts of the hoist are designed to a min. 5:1 on ultimate strength?  
(see clause 7.4.2, IS:3177)  
Yes/No
13. Is the Wire rope safety factor min. 4.62/5.25/5.6/5.95 for M3/M5/M7/M8 respectively ?  
(See Clause-8.3.2, IS:3177)  
Yes/No
- NOTE: Rope used for holding or lifting molten metal shall not exceed 12.5% of published breaking strength. (Min. safety factor = eight (8))
14. Type of wire rope & size  
\_\_\_\_\_  
\_\_\_\_\_
15. Does hoist or hoisting machinery meet or exceed Guide for Minimum Tread Diameter (At bottom of groove) of Running Sheaves? (see clause-8.5, IS:3177)  
Yes/No

16. Are bearings provided consistent with the requirement of the IS:3177-1999?  
(see clause-8.7, IS:3177)  
Yes/No
17. Are the Brakes selected for hoisting 125% of the required torque with 2 brakes (for double girder) and 150% of the required torque with 1 brake (for single girder cranes)  
(see clause-8.12, IS:3177)  
Yes/No
18. Are the Traverse Brakes selected for 100% of the required torque  
(see clause-8.12, IS:3177)  
Yes/No
19. Allowable wheel loads in compliance with requirement of the IS:3177-1999?  
(see clause-8.6.8, IS:3177)  
Yes/No
20. Are the festoon cables provided are of EPR as per IS:9968?  
Yes/No
21. Are motors used are s4 crane duty?  
Yes/No
22. Are the Gears and Pinions provided are Helical and Hardened from Low Carbon Alloy Steel?  
Yes/No
23. Are the controls sized for the class of service?  
Yes/No
24. Are short circuit devices and overload devices in compliance with requirement of the IS:3177-1999?(see clause-15.2, IS:3177)  
Yes/No
25. Are The crane structure, motor frames, and metal cases of all electrical equipment including metal conduit or cable guards shall be effectively connected to earth complying with *Indian Electricity Rules*  
(see IS:3043)  
Yes/No
26. Are Rail Sweeps provided?  
Yes/No

If the answer to any of the previous questions is NO, please take explanation from the Crane supplier

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**<there are many more questions which should be analyzed before buying a crane, please contact us for more details>**