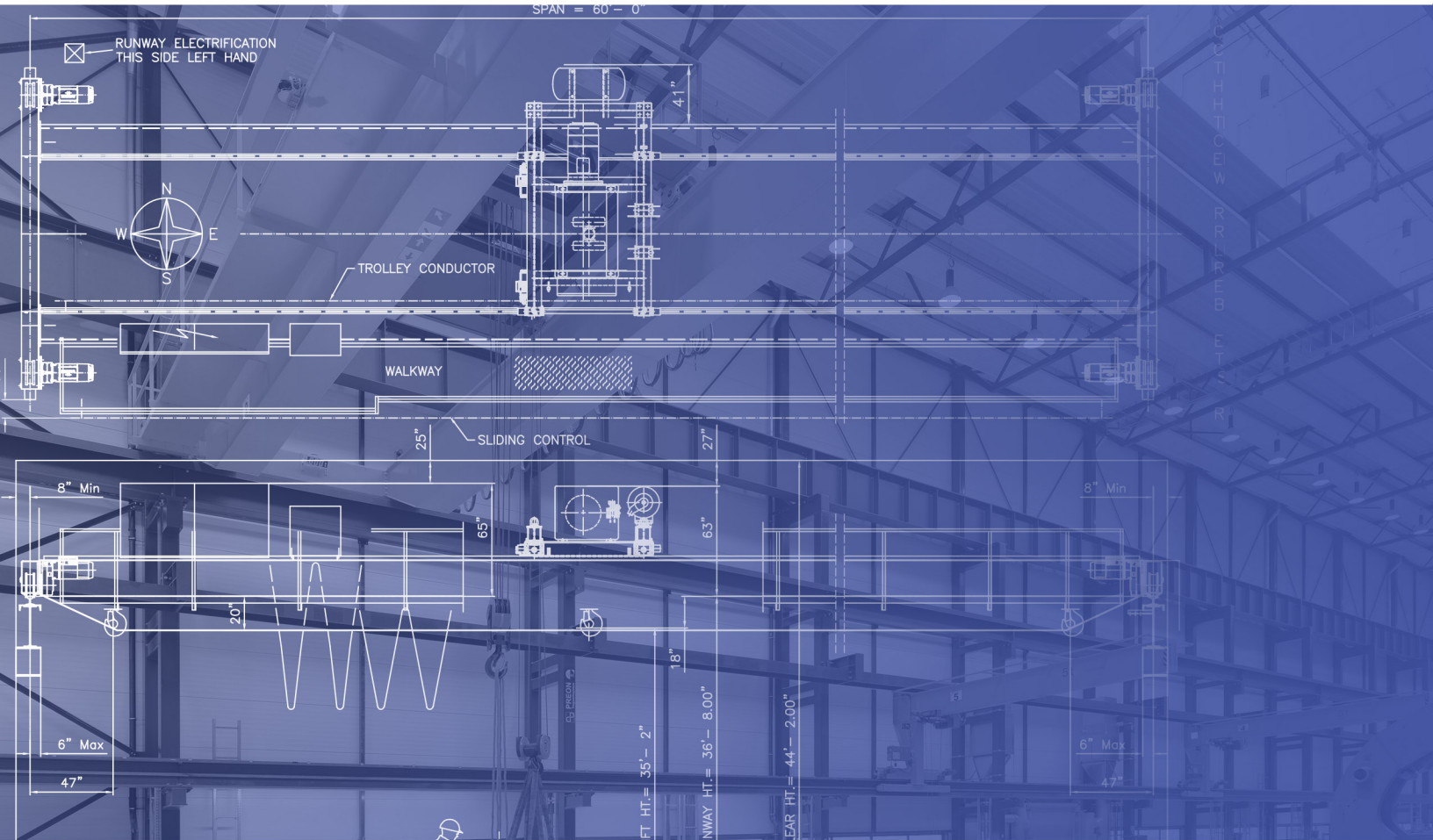




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CRANE MANUFACTURERS
ASSOCIATION OF AMERICA, INC.

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CMAA Specification No. 70 - 2020

MULTIPLE GIRDER CRANES

CMAA SPECIFICATION NO. 70-2020
SPECIFICATIONS FOR TOP RUNNING BRIDGE AND GANTRY TYPE
MULTIPLE GIRDER ELECTRIC OVERHEAD TRAVELING CRANES

INTRODUCTION

This Specification has been developed by the Crane Manufacturers Association of America, Inc. (CMAA), an organization of leading electric overhead traveling crane manufacturers in the United States, for the purpose of promoting standardization and providing a basis for equipment selection. The use of this Specification should not limit the ingenuity of the individual manufacturer but should provide guidelines for technical procedure.

In addition to Specifications, the publication contains information which could be helpful to the purchasers and users of cranes and to the engineering and architectural professions. While much of this information must be of a general nature, it may be checked with individual manufacturers, and comparisons may be made, leading to the selection of the proper equipment.

These Specifications consist of nine Sections, as follows:

70-1	General Specifications
70-2	Crane Service Classification
70-3	Structural Design
70-4	Mechanical Design
70-5	Electrical Equipment
70-6	Inquiry Data Sheet and Speeds
70-7	Appendix
70-8	Glossary
70-9	Index

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SUMMARY OF CHANGES SINCE THE 2015 REVISION OF SPECIFICATION #70

Article 1.4.2	Runway rail cleanliness
Table 1.4.2-1	Modification of runway rail straightness and elevation
Article 1.4.7, 3.14.1	Wind restraints
Article 1.5, 5.11, 5.12	Runway/bridge conductors combined in one article
Article 1.7	Revision of section
Article 1.7.3	FEA design statement
Article 3.3.2.6.3.2	Addition of in service wind load to collision load case
Article 3.4.7	Addition of load case for fatigue
Article 3.5.1	Bridge girder short depth diaphragms
Article 3.5.4.6, 3.10.1, 3.10.5	Shorter depth diaphragms / Rail bending stress
Article 3.5.5	Deflection and camber
Article 3.6.4	End truck deflection
Article 3.14	Restraint devices
Article 4.4.1	Hoist wire rope angle of loading
Article 4.4.3.2, 4.4.4, 4.5, 4.6.4, 4.6.5	Wire rope D/d ratio
Article 4.6.1, 4.6.3, 4.6.6	Hoist drum design requirement
Article 4.16	Keys and keyways
Article 5.1.6	Added reference to NEC
Article 5.2.1.3.1	Suitable motor design for use with VFD
Table 5.2.7-1, Footnote 4	Modified text
Table 5.2.7-1, Footnote 6	Continuous duty motors on intermittent duty
Article 5.2.8	Indication of motor design
Article 5.2.9.1.1.1	Variable change W to LL for clarity
Article 5.5.6	Dynamic braking resistors in conductive dust
Article 5.2.8	Low slip motor design (across-the-line starting)
Article 5.4.7.5	Practices inside enclosures (new)
Article 5.4.7.6	Practices outside enclosures (new)
Article 5.4.7.7	Suppression devices (new)
Article 5.5.5 & 5.13.2	Removed duplication and changed text
Article 5.5.6	Resistors in conductive dust (new)
Article 5.6.11	Modified text (additional of intentional reset)
Figures 5.7.3c, 5.8.1, 5.15.6	Added recommended layouts for cab, pendant and radio
Article 5.9.4.3	Added text for operation with molten metal
Article 5.13.12	Regenerative power considerations
Article 5.13.13	Application of IEEE 519 for cranes
Article 5.15	Wireless data (new)
Article 5.18	Magnet controls (new)
Article 5.19	Rail clamps (new)
Appendix	Added appendix for non-mandatory crane design information
Glossary	Anchorage
Glossary	Angle of loading
Glossary	Bridge rail
Glossary	Common mode failure
Glossary	Conductive dust
Glossary	Crane rail
Glossary	Critical load drop
Glossary	Drum
Glossary	EMC
Glossary	EMI
Glossary	Girder rail
Glossary	Hazardous locations
Glossary	Intentional reset
Glossary	Magnet
Glossary	Magnet controller
Glossary	Plain Reversing Control changed for Reversing Control
Glossary	Regenerative power system
Glossary	Restraint
Glossary	RFI
Glossary	Runway rail (modified)
Glossary	Trolley rail
Glossary	Modified Undervoltage Protection definition

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3. Response time for inquiries typically range from one week to one month, if balloted.

This Specification is accompanied by explanatory commentaries.

The commentaries in this Specification are not a part of the Specification and do not constitute a formal interpretation of the Specification (which can be obtained only through requests as indicated above). The commentaries, therefore, solely reflect the personal opinions of the editor or other contributors and do not necessarily represent the official position of CMAA or its technical committees.

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