

# OVERHEAD CRANE

## INSPECTION FREQUENCIES GUIDE

**MANY MAINTENANCE SUPERVISORS AND PLANT MANAGERS MISTAKENLY THINK THAT THEY'RE IN COMPLIANCE WITH INSPECTION STANDARDS IF THEY HAVE THEIR CRANE EQUIPMENT INSPECTED ONCE A YEAR.**

This misconception can be costly and lead to fines and downtime if OSHA were to come on-site and issue citations after performing an audit. OSHA's overhead crane inspection standards, as well as the ASME and CMAA standards, require three different types of inspections throughout the lifetime of the crane equipment:

### INITIAL INSPECTION

Any new, reinstalled, altered, repaired, and modified crane shall be inspected prior to use.

- A new crane's initial inspection shall be performed by a Qualified OEM representative in accordance with OEM recommendations.
- An altered, repaired, modified, or reinstalled crane's initial inspection shall be performed by a Qualified Person to assure that the modified component(s) have been properly installed and functionally tested.

### MANUFACTURER'S RECOMMENDATIONS

In addition to the types of inspections listed here, any inspection provisions found in the manuals supplied by the manufacturer(s) of the crane and the crane components shall also be followed.



### FREQUENT INSPECTION

A frequent inspection is a visual and operational inspection performed monthly or as often as daily. Inspection frequency is based on service, environment, and application factors, as designated by a Qualified Person.

To the right are guidelines for frequency of inspection based on ASME and CMAA overhead crane service classifications:

CMAA SERVICE CLASS	ASME B30.2 SERVICE CLASS	INSPECTION FREQUENCY
A	Normal	Semi-Monthly to Monthly
B		
C		
D	Heavy	Weekly to Monthly
E	Severe	Daily to Weekly
F		

### PERIODIC INSPECTION

A periodic inspection is a detailed visual and operational inspection where individual components are examined to determine their condition. Inspection frequency can be quarterly to annually and is based on service, environment, and application factors, as designated by a Qualified Person.

To the right are guidelines for frequency of inspection based on ASME and CMAA overhead crane service classifications:

CMAA SERVICE CLASS	ASME B30.2 SERVICE CLASS	INSPECTION FREQUENCY
A	Normal	Annually
B		
C		
D	Heavy	Semi-Annually to Annually
E	Severe	Quarterly
F		



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# CMAA DUTY CYCLES & CRANE SERVICE CLASSIFICATION

There are six (6) different classifications for overhead cranes, specified by the Crane Manufacturers Association of America (CMAA). Overhead crane service classifications were established so that the manufacturer and end-user could design the most economical crane for the application, based mostly on the average rated load that the crane will lift, and how often the crane will be performing lifts.

## CLASS A1 (STANDBY SERVICE)

This service class covers cranes where precise handling of valuable machinery at slow speeds with long idle periods between lifts is required. Rated loads may be handled for initial installation of machinery and for infrequent maintenance.

**Typical examples** are cranes used in power houses, public utilities, turbine rooms, nuclear reactor buildings, motor rooms, nuclear fuel handling and transformer stations.

**Bearing Life:** 1,250 hours  
**Number of Lifts:** Up to 2 per hour  
**Motor Starts / Stops:** 75 per hour

## CLASS B (LIGHT SERVICE)

This service class covers cranes where service requirements are light and the speed is slow and loads may vary from no load to occasional full rated loads. The average load is 50% of the rated capacity with 2 to 5 lifts per hour. The average lift distance is 15 feet with no more than 50% of the lifts at rated capacity.

**Typical examples** are cranes used in repair shops, light assembly operations, service buildings, light warehousing, etc.

**Bearing Life:** 2,500 hours  
**Number of Lifts:** 2-5 per hour  
**Motor Starts / Stops:** 75 per hour

## CLASS D (HEAVY SERVICE)

In this type of service, heavy-duty production is required but with no specific cycle of operations. The average loads approaching 50% of the rated capacity will be handled constantly during the work period. High speeds are desirable for this type of service with 10 to 20 lifts per hour. The average lift distance is 15 feet with no more than 65% of the lifts at rated capacity.

**Typical examples** are cranes used in heavy machine shops, foundries, fabricating plants, steel warehouses, container yards, lumber mills, etc., and standard duty bucket and magnet operations where heavy-duty production is required.

**Bearing Life:** 10,000 hours  
**Number of Lifts:** 10-20 per hour  
**Motor Starts / Stops:** 300 per hour

## CLASS F (CONTINUOUS SEVERE SERVICE / STEEL MILL AISE SPECIFICATION)

In this type of service, the crane must be capable of handling loads, approaching rated capacity continuously under severe service conditions throughout its life. Cranes in this class are covered by the current issue of The Association of Iron and Steel Engineers' Standard No. 6-1969, Specification for Electric Overhead Traveling Cranes for Steel Mill Service.

**Typical examples** are custom-designed specialty cranes essential to performing the critical work tasks affecting the total production facility, providing the highest reliability, with special attention to ease of maintenance features.

## CLASS A2 (INFREQUENT USE)

These cranes will be used in installations where the loads are relatively light, the speeds are slow, and a low degree of control accuracy is required. The loads may vary anywhere from no load to full rated load with a frequency of a few lifts per day or month.

**Typical examples** are small maintenance shops, pump rooms, testing laboratories, etc.

**Bearing Life:** 1,250 hours  
**Number of Lifts:** Up to 2 per hour  
**Motor Starts / Stops:** 75 per hour

## CLASS C (MODERATE SERVICE)

This service covers cranes where service requirements are deemed moderate. The average load is 50% of the rated capacity with 5 to 10 lifts per hour. The average lift distance is 15 feet with no more than 50% of the lifts at rated capacity.

**Typical examples** are cranes used in machine shops, paper mill machine rooms, etc.

**Bearing Life:** 5,000 hours  
**Number of Lifts:** 5-10 per hour  
**Motor Starts / Stops:** 150 per hour

## CLASS E (SEVERE SERVICE)

This type of service requires a crane capable of handling loads approaching the rated capacity continuously, in repetition throughout a stated period per day, in a predetermined cycle of operation. The average load at or near the rated capacity. High speeds are required with 20 or more lifts per hour. The complete cycle of operation should be specified.

**Typical examples** are magnet, bucket, magnet / bucket combination cranes for scrap yards, cement mills, lumber mills, fertilizer plants, container handling, etc.

**Bearing Life:** 20,000 hours  
**Number of Lifts:** 20+ per hour  
**Motor Starts / Stops:** 600 per hour



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