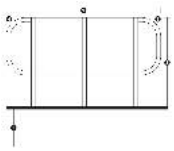
Handrail Compliance



The tested handrail was a six foot section of Inline Aluminum Handrail, with posts mounted 48” apart. The posts were secured to Tate CCN1250 Bare Panels with four #14 x 1” sheet metal screws at each post. The floor panels were cornerlocked to pedestals, which were in turn secured to the sub floor with drop in anchors and 3/8” all thread.

Load testing was performed to verify compliance with OSHA 29 CFR 1910.23, which defines performance criteria for guard rails, stair rails, and standard rails. The requirements of OSHA 29 CFR 1910.23 require the anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail.

Load testing was also performed to verify that the handrail was capable of supporting a uniform load of 50 lb/ft. This load was simulated with a 300 pound concentrated load applied at the center of the handrail.

Four load applications were selected for testing. These locations were as follows:

- Center of top rail, 300 pound longitudinal load applied against the rail
- Center of top rail, 300 pound vertical load applied straight down
- End of handrail, 200 pound longitudinal load applied against the rail
- End of handrail, 200 pound transverse load applied in same plane with the handrail

The load was applied with the use of a rachet secured to an installed post. The rachet was used to pull 3/16” diameter wire, which was secured to the handrail with the use of a sling. A TL-440 Digital Hanging Scale was used to record the applied load and was placed at the connection of the wire to the sling.

The load was applied and held for a minimum of 1 minute. Measured loads were as follows:

- Longitudinal load at center of top rail: 311.2 lb
- Vertical load at center of top rail: 303.0 lb
- Longitudinal load at end of handrail: 228.0 lb
- Transverse load at end of handrail: 214.8 lb

Based on the load testing, the Inline Aluminum Handrail satisfies the OSHA 29 CFR 1910.23 load requirements. Additionally, the Inline Aluminum Handrail is capable of supporting a uniform load of 50 lb/ft.

SPECIFICATIONS

Aluminum 6063 t52
Satin Anodized Finish
Post Spacing Maximum 48"