SOUDURE DENIS RANGER INC.

Technical Specification
Steel Deck Truck Scale

These specifications describe a fully electronic, low-profile, modular steel deck truck scale system designed for installation on an above-ground pier foundation, a floating slab, or in a pit, as selected. The scale shall be a 3-module, 4-section system equipped with 8 load cells.

1.0 General Requirements – Truck Scale

The scale shall be a fully electronic steel deck truck scale. The scale platform shall be designed and manufactured in Canada. The scale platform, load cells, and digital indicators shall be supplied by the same supplier. The scale shall be an SDR 8011-3-100 model or equivalent, meeting the following minimum standards.

1.1 The scale shall have a capacity of 100 tons (200,000 lb), with a displayed resolution of 100,000 kg x 10 kg, in accordance with Class III HD devices.

1.2 The scale shall be of fully electronic design. The weighbridge shall consist of factory-welded modules with an overall longitudinal span of 80 ft and a platform width of 10 ft. No field welding shall be permitted. Mechanical lever systems are not acceptable.

1.3 The supplied scale shall provide an unobstructed weighing surface 10 ft (9 ft - 10.5 in) wide by 80 ft long

1.4 The scale modules shall be designed to eliminate the use of grout plates requiring placement and levelling before the scale arrives on site. A maximum of 2 drilled anchors shall be provided for each load cell mount.

1.5 The scale system shall be of fully electronic design with an internally self-checking weighbridge. Weighbridges using check bolts, externally attached stay rods, or check plates embedded in the end walls shall not be permitted. This self-checking design is required to reduce the maintenance associated with designs using an adjustable restraint system.

1.6 The minimum weighbridge depth shall be 12 in. The scale shall have an open-bottom design. Weighbridges using a sealed bottom plate for structural strength shall not be permitted. This requirement is intended to allow direct access to the internal structural steel and enable proper inspections.

1.7 A 3/8 in diamond-pattern non-slip steel deck plate shall be supported by 12 in longitudinal structural wide-flange beams, with welds to the beam top flange and the module end plate. However, the outer module ends shall have a continuous weld. Only structural wide-flange beam construction shall be permitted. Weighbridge designs using lightweight joists or bent plates shall not be permitted.

1.8 The complete deck assembly shall be sandblasted before any coating or paint is applied to the weighbridge modules. The customer reserves the right to inspect the steel surfaces before any coating is applied to the prepared steel surfaces. All steel surfaces shall be free of welding gases, residue, oil, mill scale, and rust. All steel components shall be sandblasted to SSPC-SP6.

1.9 All visible steel surfaces shall receive a solids epoxy coating with a dry film thickness of 6 to 8 mils

1.10 The module end plates shall have a minimum thickness of 1/2 in

1.11 The scale shall meet the requirements established by Measurement Canada.

1.12 The scale shall be equipped with optional bolt-on, gusset-reinforced safety guardrails on each side of the scale, using pipe with a minimum diameter of 4 in. A minimum of 3 bolts shall be used at each gusset to secure the side rail. Guardrails welded to the weighbridge shall not be permitted.

2.0 **Load Cells and Junction Boxes**

The load cells are rigidly mounted using a single-link suspension to ensure equal, consistent, and uniformly distributed force on the load cell. The load cells are fully self-contained and are supplied with mounting brackets, a single-link suspension, and an appropriate length of cable to the junction box. Compression-type or rocker-column load cells shall not be permitted.

2.1 The load cells shall be rigidly mounted in fabricated steel brackets, parallel to the direction of traffic. The suspension system shall use a single link to allow self-centring and a freely floating platform. Rocker-column or compression-type load cells requiring stay rods, anti-rotation pins, or check bolts shall not be permitted.

2.2 The load cells shall be analogue type and shall each have a minimum capacity of 75,000 lb, with an overload safety factor of 150%. Scales using load cells with a capacity below 75,000 lb shall not be permitted.

2.3 Scales using adjustable check bolts or plates embedded in the wall to reduce deck movement shall not be permitted.

2.4 Systems using proprietary internal circuitry to convert the analogue load cell signal to a digital signal within the load cell shall not be permitted.

2.5 All access to the load cells shall be from the side of the weighbridge.

2.6 The load cells shall be made of nickel-plated alloy steel and shall be sealed to a minimum protection rating of IP67.

2.7 The load cells shall be of non-proprietary design for both mechanical operation and electronic data transmission. Manufacturers using proprietary load cell technology available from only one source shall not be permitted.

2.8 Replacement load cells shall be available from multiple suppliers nationwide and shall not be single-source or proprietary in design.

2.9 Fibreglass-reinforced polyester (FRP) junction box with formed, contoured edges and gasketed top access. The junction box shall be equipped with a GORE-TEX® one-way membrane vent. Steel junction boxes shall not be permitted.

2.10 The load cell mounts shall be mounted flush with the concrete piers and secured using wedge anchors or similar bolts. Grout plates or components embedded in the foundation concrete shall not be permitted.

2.11 The load cells shall be warranted against failure for at least five years.