



NOTICE

This documentation has been reviewed by the **Technical Authority** and does not contain controlled goods.

AVIS

Cette documentation a été révisée par l'**Autorité technique** et ne contient pas de marchandises contrôlées.

**ANNEX "B" – PURCHASE DESCRIPTION
FOR SEMI-TRAILER, 53 FT, SINGLE DROP,
31,752 kg (70,000 lb) PAYLOAD**



1. SCOPE

1.1 **Scope** - This Purchase Description defines the requirements for a semi-trailer, 31,752 kg payload. This semi-trailer will be used to transport vehicles and general cargo.

1.2 **Instructions** – The following instructions apply to this Purchase Description.

- (a) Requirements, which are identified by the word “***must***”, are mandatory. Deviations will not be permitted;
- (b) Requirements identified by “***must***”..... or “***equivalent***” are mandatory. The Technical Authority will consider substitutes/alternatives for acceptance as a Technical Authority approved equivalent;
- (c) Requirements identified with a “will” define actions to be performed by Canada and require no action/obligation on the Contractor’s part;
- (d) Where “***must***”, “***must***”..... or “***equivalent***”, or “will” are not used, the information provided is for guidance only;
- (e) In this document “provided” means “provided and installed”;
- (f) Where a standard is specified and the Contractor has offered an ***equivalent***, that equivalent standard ***must*** be supplied by the Contractor, at no cost to Canada, when requested by the ***Technical Authority***;
- (g) Where a technical certification is referred to in this Purchase Description, a copy of the certification or an acceptable Proof of Compliance ***must*** be provided for the semi-trailer when requested by the Technical Authority up until the date of the expiration of the warranty period;
- (h) While the SI system is used as the primary system of measurement to define requirements of this Purchase Description, both the SI system and the Standard system of measurements may be indicated. Conversions from one system of measurement to the other may not be exact; and
- (i) Dimensions stated as nominal are treated as approximate dimensions. Nominal dimensions reflect a method by which materials or products are generally identified for sale commercially, but which differ from the actual dimensions.

1.3 **Definitions**

- (a) “***Provided***” means “provided and installed”;
- (b) “***Technical Authority***” means the official responsible for the technical content of this Purchase Description;



- (c) “**Equivalent**” means a standard, means, or component type, which the Technical Authority has approved for this requirement as meeting the specified requirements for fit, form, function and performance;
- (d) “**Commercially Equipped**” means that the semi-trailer is provided in its standard commercial configuration with no additional government-specified requirements;
- (e) “**Road Legal**” means the semi-trailer can be legally operated on all Canadian highways and secondary roads, without restrictions or special permits;
- (f) “**Curb Weight**” (CW) means the weight of the fully equipped semi-trailer. The curb weight includes all attached accessories and equipment. The Curb Weight does not include the Payload;
- (g) “**Payload**” means the maximum cargo load carrying capacity of the semi-trailer. The payload is the calculated difference between the Gross Vehicle Weight Rating and the Curb Weight;
- (h) “**Gross Axle Weight Rating**” (GAWR) means the gross axle weight rating, which is the maximum axle load allowed by the manufacturer for this application; and
- (i) “**Gross Vehicle Weight Rating**” (GVWR) means the maximum operating weight of the semi-trailer as stated by manufacturer.



2. APPLICABLE DOCUMENTS - The following documents are referenced in this Purchase Description. Canada will not be supplying any reference documents. Available information on the organization is supplied.

SAE Standards

SAE World Headquarters
400 Commonwealth Dr.,
Warrendale, PA, 15096-0001
<http://www.sae.org>

Canada Motor Vehicle Safety Act (CMVSA)
Government of Canada / Transport Canada,
<http://www.tc.gc.ca/eng/acts-regulations/acts-1993c16.htm>

Federal Standard 595C
COLOURS USED IN GOVERNMENT PROCUREMENT
U.S. General Services Administration
<http://www.fed-std-595.com/FS-595-Paint-Spec.html>



3. REQUIREMENTS

3.1 Standard Design

- (a) The semi-trailer ***must*** be the latest model from a manufacturer who has demonstrated acceptability by selling this type and size class of equipment for at least three (3) years;
- (b) The semi-trailer ***must*** include all components, equipment and accessories normally supplied for this application, although they may not be specifically described in this Purchase Description;
- (c) The semi-trailer ***must*** have engineering certification available, upon request, for this application from the original manufacturers of major equipment, systems and assemblies;
- (d) The semi-trailer ***must*** conform to all applicable laws, regulations and industrial standards in effect in Canada at the time of manufacture. The regulatory areas may include but are not necessarily limited to manufacturing, health and safety, noise levels, environment and emissions; and
- (e) The semi-trailer and accessories ***must*** operate in accordance with all original equipment manufacturers' (OEM) rated capacities and performance specifications.

3.2 Vehicle Safety Regulations

- (a) The semi-trailer ***must*** meet the provisions of the Canada Motor Vehicle Safety Act.

3.3 Maintainability

- (a) The semi-trailer ***must*** be provided with all operator tools required for routine preventative maintenance.

3.4 Operating Conditions

- (a) The semi-trailer ***must*** operate safely and effectively on paved roads, gravel roads and dirt roads with severe washboard and pot holes, without degradation in performance, reliability and maintainability;
- (b) The semi-trailer ***must*** operate safely and effectively throughout a temperature range of -40°C to 40°C, without degradation in performance, reliability and maintainability; and
- (c) The semi-trailer ***must*** operate safely and effectively with the stated payload under all operating conditions, without degradation in performance, reliability and maintainability.

3.5 Payload

- (a) The semi-trailer ***must*** carry a load of at least 31,752 kg, distributed uniformly across the upper and main decks.



3.6 **Dimensions**

- (a) The semi-trailer **must** have an overall nominal length of 16m (53ft);
- (b) The semi-trailer **must** have an overall nominal maximum width of 2.6m (8.5ft);
- (c) The semi-trailer main deck **must** have a length of 13m (42ft) or greater;
- (d) The semi-trailer main deck, un-laden, **must** have a nominal height of 1m (40in);
- (e) The semi-trailer **must** have a maximum kingpin distance (KP) of 609mm (24in) from the front of the semi-trailer;
- (f) The semi-trailer **must** have a nominal kingpin height of 1,244mm (49in) measured from the ground to the kingpin upper plate; and
- (g) The semi-trailer **must** have a landing wheel clearance from kingpin (LWC) of at least 2,159mm (85in).

3.7 **Capabilities**

3.7.1 **Speed**

- (a) The semi-trailer **must** be towed safely at a continuous speed of at least 110km/h on paved roads while loaded to capacity.

3.8 **Chassis and Auxiliary Systems**

3.8.1 **Air Brakes**

- (a) The semi-trailer **must** be provided with an anti-lock, air, disc brake system;
- (b) The air brake system **must** be equipped with remote, cable operated drain valves on the air reservoirs, with heated moisture expelling valve(s);
- (c) The brake housings **must** be equipped with dust shields;
- (d) The air brake system **must** be equipped with colour coded glad hand couplers, with glad hand covers including a safety chain for each glad hand; and

3.8.2 **Axles**

- (a) The semi-trailer **must** be provided with three (3) axles.

3.8.3 **Suspension**

- (a) The semi-trailer **must** be provided with an air bag suspension system;
- (b) The suspension system **must** include an automatic height control valve;
- (c) The suspension system **must** include a manual suspension air dump valve;



- (d) The suspension system **must** include shock absorbers acting on all wheel stations;
- (e) The suspension system **must** include an air gauge to assist the operator in determining system pressure; and
- (f) The suspension system **must** have suspension travel limiters, such as cables or chains fastened to the suspension beam or axle and the under frame, at a length equal to or less than the shock absorber extended stroke. The use of the shock absorbers as travel limiters is not acceptable.

3.8.4 **Tires and Wheels**

- (a) The semi-trailer **must** be provided with dual wheels at each wheel station;
- (b) The wheels **must** have sufficient load capacity such that the semi-trailer, while loaded to the rated capacity and equipped with all options, does not exceed the full speed capacity of the wheels;
- (c) The tire pressures **must** be clearly marked near the tire location using decals or high contrast coloured paint;
- (d) The semi-trailer **must** be provided with a hub odometer reading in kilometres;
- (e) The wheels **must** be non-polished aluminium wheels; and
- (f) The wheels **must** be provided with loose wheel nut indicators.

3.8.5 **Spare Tires**

- (a)
 - i. The semi-trailer **must** be provided with a common inner and outer spare tire /wheel; or
 - ii. If the wheel design is different on the inner mounted wheels and the outer mounted wheels, then one spare tire/wheel of each **must** be provided; and
- (b) The spare tire/wheel(s) **must** be mounted at the front of the upper deck.

3.9 **Electrical System**

3.9.1 **General**

- (a) The semi-trailer **must** be provided with a 12 volt negative ground electrical system;
- (b) The semi-trailer **must** be provided with an SAE J560 7-pin 12- volt trailer connector receptacle (with power to ABS) to interface with the connector plug on the tractor cable; and
- (c) All electrical components **must** be accessible for servicing.



3.9.2 **Wiring**

- (a) All wiring **must** be protected by grommets when passing through metal; and
- (b) A coloured coded wiring schematic(s) for the semi-trailer **must** be provided.

3.9.3 **Lighting**

- (a) All semi-trailer lighting **must** be LED lights; and
- (b) The semi-trailer lights and reflectors **must** be recessed or otherwise protected from damage.

3.10 **Trailer Construction**

3.10.1 **Trailer Frame**

- (a) The semi-trailer **must** be provided with a frame that is reinforced for towing points; and
- (b) The semi-trailer **must** be provided with main frame beams and load bearing cross members which are constructed of high strength steel, with a minimum yield strength of 552 MPa (80,000 psi).

3.10.2 **Decking Floor**

- (a) The semi-trailer **must** be provided with a full and continuous main and upper decks, with no openings over the rear wheels or elsewhere;
- (b) The main deck floor **must** be constructed of treated hardwood planks not less than 64-mm thick. The area above the rear wheels may be constructed of a different material to minimize overall deck height; and
- (c) The upper deck floor **must** be constructed of treated hardwood planks not less than 38mm thick.

3.10.3 **Kingpin**

- (a) The semi-trailer **must** be provided with a 51mm (2in) kingpin.

3.10.4 **Landing Gear**

- (a) The semi-trailer **must** be provided with an inter-connected two legged landing gear with self-levelling landing pads;
- (b) The landing gear assembly **must** have the crank handle located on the driver's side of the semi-trailer; and
- (c) The landing gear assembly **must** have a lifting capacity sufficient to lift the semi-trailer when loaded to capacity.



3.10.5 **Features**

(a) **Dock Bumpers**

- i. The semi-trailer ***must*** be provided with heavy-duty rubber dock bumpers at the rear corners, measuring nominally 102mm (4in) deep;

(b) **Winches and Straps**

i. **Fixed Winches**

1. The upper deck of the semi-trailer ***must*** be provided with a total of four (4) fixed winches along the LH and RH sides of the semi-trailer;
2. The upper deck fixed winches ***must*** be staggered with two (2) winches per side, and evenly spaced;
3. The main deck of the semi-trailer ***must*** be provided with a total of six (6) fixed winches, located above the tridem axles, along the LH and RH sides of the semi-trailer;
4. The main deck fixed winches ***must*** be staggered with three (3) winches per side, and evenly spaced; and
5. On the opposite side of each fixed winch, a means ***must*** be provided to attach a strap/chain slip hook.

ii. **Sliding Winches**

1. The main deck ***must*** be provided with a total of sixteen (16) sliding winches, with eight(8) sliding winches on each side of the semi-trailer, located forward of the axles;
2. The sliding winches ***must*** be mounted on a full length sliding mechanism along each side of the semi-trailer; and
3. On the opposite side of the sliding winches, a means ***must*** be provided to attach the strap/chain slip hook.

iii. **Strap Assembly**

1. The semi-trailer ***must*** be provided with a total of twenty-six (26) strap assemblies, one strap assembly for each of the fixed and sliding winches;
2. Each assembly ***must*** consist of a strap, chain and slip hook;
3. The strap assembly dimensions ***must*** be 76mm (3in) wide by 8230mm (27ft) long; and
4. The strap assembly ***must*** have a minimum load capacity of 2450kg.



(c) Key-hole slots

- i. The semi-trailer main deck **must** be provided with a total of twenty-four (24) key-hole slots, with twelve (12) key-hole slots located on each side of the semi-trailer near the edge, and evenly spaced;
- ii. The semi-trailer upper deck **must** be provided with a total of eight (8) key-hole slots, with four (4) key-hole slots located on each side of the semi-trailer near the edge, and evenly spaced; and
- iii. The key-hole slots **must** function with the strap assemblies provided with the winches.

(d) Exterior side-mounted tie-down points

- i. The semi-trailer main deck **must** be provided with a total of sixteen (16) tie-down points, with eight (8) tie-down points located on each side of the semi-trailer, mounted to the side on the exterior;
- ii. The semi-trailer upper deck **must** be provided with a total of eight (8) tie-down points, with four (4) tie-down points located on each side of the semi-trailer, mounted to the side on the exterior; and
- iii. The tie-down points **must** be of D-ring type, with a capacity equal or better than the strap assemblies provided with the winches.

(e) Storage Compartment

- i. The semi-trailer **must** be provided with a storage compartment of sufficient size to store all straps, winch components and safety markers for use with the semi-trailer;
- ii. The storage compartment **must** be located beneath the main deck, forward of the axles;
- iii. The storage compartment **must** be lockable; and
- iv. The floor of the storage compartment **must** be equipped with drain holes with evacuation valves.

(f) Container Locks

- i. The semi-trailer main deck **must** be provided with eight (8) retractable ISO locks, able to accommodate one 12.2m ISO container (Class/Designation "1A" IAW ISO 668) or two 6.1m ISO containers (Class/Designation "1C" IAW ISO 668); and
- ii. The ISO locks **must** be flush with the main deck surface when not in use.



3.11 **Miscellaneous Equipment**

3.11.1 **Towing Points**

- (a) The semi-trailer ***must*** be provided with two (2) rear-mounted towing points, positioned and of sufficient strength to permit recovery of the loaded semi-trailer.

3.11.2 **Railway Tie-Down Points**

- (a) The semi-trailer ***must*** be provided with railway tie-down points, positioned and sufficient strength to permit the securing and transportation of the loaded semi-trailer on a railroad car.

3.11.3 **Mud Flaps**

- (a) The semi-trailer ***must*** be provided with mud flaps located behind the rear axle; and
- (b) The mud flaps ***must*** be made of plain black rubber with no logos displayed.

3.11.4 **License Plate Holder**

- (a) The semi-trailer ***must*** be provided with a license plate holder located at the rear.

3.11.5 **Document Holder**

- (a) The semi-trailer ***must*** be provided with a document holder, located on the LH side at the front.

3.12 **Paint and Corrosion Protection System**

3.12.1 **Paint**

- (a) The semi-trailer ***must*** be painted in accordance with the manufacturer's best production procedures using standard commercial practices and materials, rendering a durable finish of the required film thickness and a smooth appearance free from runs, sags and orange peel;
- (b) The paint finish ***must*** be low-gloss or flat black; and
- (c) Additional lettering and symbols on the outside of the semi-trailer ***must*** be in a high contrast colour.

3.12.2 **Corrosion Protection System**

- (a) **Galvanic Corrosion**
 - i. The semi-trailer ***must*** be protected against galvanic corrosion where dissimilar metals are used;



(b) **Rust Prevention Coating**

- i. The semi-trailer ***must*** be provided with a rust prevention coating to the underbody, in addition to the standard factory rustproofing;
- ii. The rust prevention coating product applied ***must*** be Tectyl, Krown or Rust Check;
- iii. A decal ***must*** be affixed to the semi-trailer displaying the type of rust prevention coating used; and
- iv. Warranty papers covering the rust prevention coating ***must*** accompany the semi-trailer.

3.13 **Warning and Instruction Plates**

- (a) The warning and instruction plates ***must*** be within easy view of the user and in accordance with standard commercial practice; and
- (b) The warning and instruction plates ***must*** be international symbols and/or bilingual (English and French) markings.

3.14 **Semi-Trailer Delivery Condition**

- (a) The semi-trailer ***must*** be delivered to destination in a fully operational condition (serviced and adjusted);
- (b) The semi-trailer ***must*** be completely cleaned; and
- (c) Lubricants installed in the semi-trailer at time of delivery ***must*** be suitable for the destination and the season of delivery.



4. **DELIVERABLE INFORMATION**

4.1 **Equipment Manuals**

4.1.1 **Operator's Manual**

- (a) The Contractor ***must*** provide a bilingual (English and French) Operator's Manual in hard copy format with each semi-trailer; and
- (b) The Contractor ***must*** provide a bilingual (English and French) Operator's Manual in digital format (CD or DVD) to the Technical Authority at the first semi-trailer delivery; and
- (c) Digital copies ***must*** be functional without the requirement for a password, an auto-run installation procedure or an Internet connection.

4.1.2 **Parts Manual**

- (a) The Contractor ***must*** provide an English (Bilingual is acceptable) Parts Manual in hard copy with the first semi-trailer;
- (b) The Contractor ***must*** provide an English (Bilingual is acceptable) Parts Manual in digital format (CD or DVD) to the Technical Authority at the first semi-trailer delivery; and
- (c) Digital copies ***must*** be functional without the requirement for a password, an auto-run installation procedure or an Internet connection.

4.1.3 **Maintenance Manual**

- (a) The Contractor ***must*** provide an English (Bilingual is acceptable) Maintenance Manual in hard copy with the first semi-trailer;
- (a) The Contractor ***must*** provide an English (Bilingual is acceptable) Maintenance Manual in digital format (CD or DVD) to the Technical Authority at the first semi-trailer delivery; and
- (c) Digital copies ***must*** be functional without the requirement for a password, an auto-run installation procedure or an Internet connection.

4.2 **Data Summary**

- (a) The Contractor ***must*** complete a Data Summary for the semi-trailer using a template provided by the Technical Authority; and
- (b) The Contractor ***must*** provide the Data Summary in digital format (CD or DVD) to the Technical Authority at the first semi-trailer delivery.

4.3 **Photographs and Line Drawings**

- (a) The Contractor ***must*** provide two (2) digital colour photographs, one of the left front three-quarter view, and one of the right rear three-quarter view of the semi-trailer;
- (b) The photographs ***must*** be taken with a clear, uncluttered background;



- (c) The Contractor **must** provide one line drawing showing at least one side view and one end view of the semi-trailer with dimensions; Brochure line drawings are acceptable; and
- (d) The photographs and Line Drawings **must** be provided in digital format (CD or DVD) to the Technical Authority at the first semi-trailer delivery.

4.4 **Warranty Letter**

- (a) The Contractor **must** complete a Warranty Letter for the semi-trailer using a template provided by the Technical Authority;
- (b) The Contractor **must** provide a paper copy of the completed Warranty Letter with each semi-trailer shipped; and
- (c) The Contractor **must** provide a copy of the completed Warranty Letter in digital format (CD or DVD) to the Technical Authority for each semi-trailer shipped.

4.5 **Line Setting Ticket**

- (a) The Contractor **must** produce a Line Setting Ticket, or equivalent, describing the components provided on the semi-trailer;
- (b) The Contractor **must** provide a paper copy of the Line Setting Ticket with each semi-trailer shipped; and
- (c) The Contractor **must** provide the Line Setting Ticket in digital format (CD or DVD) to the Technical Authority for each semi-trailer.

4.6 **Familiarization Training**

- (a) The Contractor **must** supply a familiarization training in English;
- (b) The familiarization training **must** include operation and maintenance segments demonstrating all safety measures required for safe equipment use, instructions on the use of all accessories supplied and maintenance;
- (c) The familiarization training **must** be supplied at the delivery destination;
- (d) The familiarization training **must** have a minimum duration of two (2) hours; and
- (e) The familiarization training **must** accommodate a group of size of up to eight (8) personnel.

4.7 **Load Analysis Drawing**

- (a) The Contractor **must** provide a load analysis drawing showing principle vehicle dimensions for the analysis and the axle and kingpin loads when subjected to the payload; and
- (b) The load analysis drawing **must** be provided in digital format (CD or DVD) to the Technical Authority at the first semi-trailer delivery.