



Transnet Freight Rail - Container Automotive Business
Rubber Tyred Container Handling Equipment
Technical Pre-requirement Criteria(s)

Item No.	Description of Criteria	TFR's Minimum Requirements
		Reach-stacker
Criteria 1-4 = (Technical Specification/ Quality of Product/ Fit for Purpose)		
1	Maximum operating load 1st - Row	45000kg
2	Maximum operating load 2nd - Row	34000kg
3	Maximum operating load 3rd - Row	16000kg
4	Ability to stack - 1st Row	5-high
5	Ability to stack - 2nd Row	4-high
6	Ability to stack - 3rd Row	3-high
7	Operating Condition	All weather
8	Operating Temperature	-10 - 45°C
9	Elevating Speed - unloaded	0,39 to 0,45m/s
10	Lowering Speed - unloaded	0,33 to 0,39m/s
11	Load Centre	1200mm
12	Ground Clearance	> 250 mm
13	Travelling Speed - unloaded (forward)	20km/h
14	Travelling Speed - loaded (forward)	5km/h
15	Travelling Speed - unloaded (reverse)	20km/h
16	Travelling Speed - loaded (reverse)	5km/h
17	Front Axle load at load centre - unloaded (1st Row)	34000 to 35000kg
18	Front Axle load at load centre - loaded (1st Row)	100000 to 101000kg
19	Rear Axle load at load centre - unloaded (1st Row)	32000 to 35000kg
20	Rear Axle load at load centre - loaded (1st Row)	11000 to 15000kg
21	Nominal Pulling Force - Without Load (2kmh)	35 to 39%
22	Nominal Pulling Force - With Rated Load (2kmh)	20 to 32%
23	Turning Radius - R1	≤ 8200mm
24	Turning Radius - R2	-
25	Turning Radius - R3	≤ 12000mm
27	Engine Type	Diesel 4-stroke
28	Engine Rated Power/ Rotational Speed	245kW - 2000r/min
29	Engine Rated Torque/ Rotational Speed	1750Nm - 1200r/min
30	Braking System	Independent braking system - stop and hold at 1-in-15 gradient (incl. parking) Wet-disc brakes
31	Noise emission	<85 db
32	Fuel Consumption (normal operations)	16l/h
33	Fuel Consumption (normal operations) to operate without refuelling	16hrs
34	Fuel tank capacity	> 500
36	Clutch Type	Torque converter
37	Gearbox Type	Hydrodynamic/ Powershift/ Softshift
38	Number of forward gears	4
39	Number of reverse gears	4
40	Tyres - Type	Pneumatic
41	Tyre Size - Front	180x25
42	Tyre Size - Rear	180x25
43	Tyre Sizes Availability	Local
44	Spreader - Type	Telescopic Spreader/ Hydraulic
45	Spreader - Sideshift	> 400mm
46	Spreader Capability	3m, 6m and 12m Containers
47	Spreader Control	Cab Controlled locking and unlocking of twist-locks Locking and unlocking of twist-locks indicator lights fitted to Cab and Spreader Twistlocks to interlock in the open position Spreader must be attached and detached with the least effort by the operator.

Criteria 5-6 = (Risk and Safety)		
48	Protection/ Safety Systems	Overload management system -Electronic Overload to be reflected by warning light and audible alarm Anti-tipping management system Engine management system - Electronic Protection System (including audible alarm) - Shuts down engine if any of the following malfunctions: - engine oil pressure, engine oil temperature, transmission oil temperature, water level and water temperature. Fuel and water separator (including warning for draining system) Audible reverse alarm Greasing and lub systems to be easily assessable. Comply to Road Traffic Act, OHS Act and any other applicable legislation Load Test certificate - valid
49	Electrical	24 volt or (2) 12 volt Complete (for) visual/ warning lights, hooter, audible, etc as per Clause 13.5 to accommodate day and night operation
50	Cab Requirements	Eco-friendly Cab as per Clause 15. including effective air-con Multi-functional joystick Instrumentation/ warning indicators and alarms as per Clause 16. or elsewhere stated
51	Corrosion Protection	Very high standard and all metal surfaces must be covered effectively Hollow and hidden corrosion proofed at 240 microns 5-year guarantee
52	Maintenance Plan	Full Plan (excluding tyres) 500 hours service intervals 1- respective service exchange units for engines and gearboxes Inventory of all critical parts and spares Inventory of all service related parts and spares Minor service and inspections - Completion within 3 to 5 hours Major service and inspections - Completion within 4 to 7 hours Callouts/ back-up to site available within 2 hours Preventative Maintenance Strategy
Criteria 7-8 = (Technical Capacity and Resources)		
53	Current/ and or Proposed Organogram to provide the maintenance plan. Sub-contractor capability for outlying area(s) not core to the in-land Terminal(s).	Detailed organogram of current operational structure.
54	Current/ and or Proposed Workshop facilities provide the maintenance plan	Workshop must be fully equipped to handled all major repairs
55	Current/ and or Proposed Mobile fleet to provide on-site repairs and callout(s)	Adequate number of fully equipped vehicles that have the capacity to meet on-site callout requirements
56	24-Hour Service Desk or Facility	24-hour service desk that can register and manage callout(s)
57	Examples of Equipment Current Assessment Reports, Service Check-list, Incident Reports, Off-Site Maintenance Management system i.e. SAP, CMMS, EMS, etc	Workshop must be equipment with a off-site maintenance management system e.g. SAP, CMMS, EMS, etc.
58	Current/ and or Proposed Footprint	Technical footprint must cover City Deep, Pretoria, Bloemfontein. Added benefit if Durban, Cape Town, Port Elizabeth is covered.
59	Minimum Units previously supplied as reference	5 to 10 (Last 2-years)
60	Minimum Units previously supplied as reference	5 to 10
61	Reputable contact references as clients/ customers	5
Delivery 9 = (Delivery)		
62	Delivery of Equipment from Date of Order	3-weeks
63	Delivery of Critical Spares	24-hours
64	Delivery of Equipment to Operations after major repairs e.g. engine, gearbox, diff	36 hours (mean-time-to-repair)
65	Delivery to Equipment to Operations after minor repairs	3-6 hours (mean-time-to-repair)