



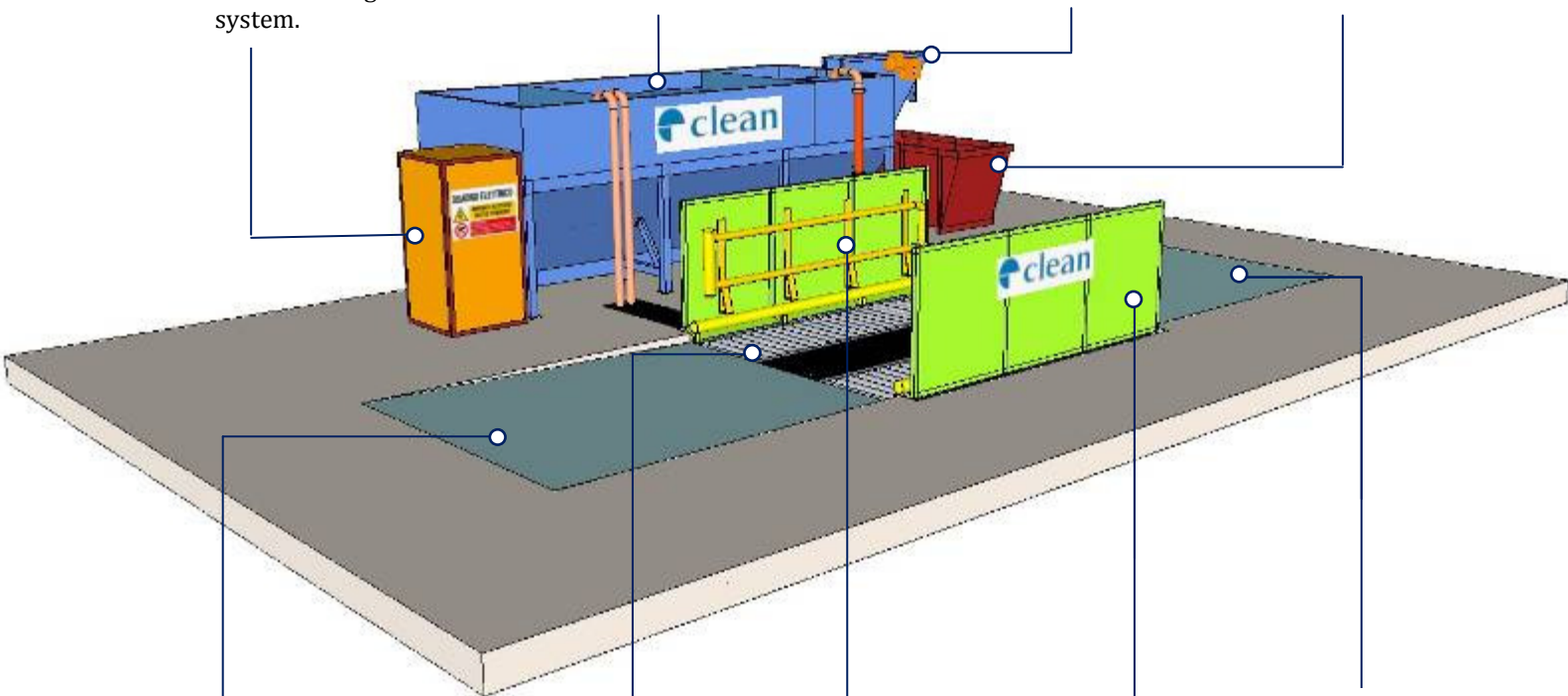
PERMANENT WHEEL WASHING SYSTEMS MOD. Clean 400 FEC

Protection box for electric control panel and flocculent dosing system.

Water storage tank and sand trap.

Sludge removal plant.

Sludge and sand collection tank.



Entrance or exit ramp.

Horizontal washing collectors with fan nozzles.

Vertical washing collectors with fan nozzles.

Side protection panels.

Entrance or exit ramp.



Permanent drive-through system with fixed nozzles

Engineering Data mod. CLEAN 400 FEC

Total length of the washing plant structure.	mm	4.000
Washing track inside width.	mm	3.000
Washing plant width with side protection panels.	mm	3.500
Washing plant inside length.	mm	4.000
Washing plant height..	mm	400
Washing plant height with side protection panels.	mm	1.500
Length of tire guides.	mm	4.000
Length of entrance and exit ramps in reinforced concrete.	mm	4.000
Length of dripping zone (recommended).	mm	4.000
Total weight of the whole plant.	kg	7.000
Number and type of spray nozzles.	n°	150 / fixed fan nozzles
Wheel wash water supply.	--	clarified water
Connected load.	kg	90.000
Materials used in the self-supporting structure.	--	Carbon steel Fe 510.
Protection from corrosion.		Hot dip galvanizing



PERMANENT washing plant installed in a cement or asphalt bed mod. 400 FEC:

- ▶ AUTOMATIC washing plant.
- ▶ Entrance and exit ramps built in reinforced concrete with a maximum slope of 10%.
- ▶ 2 transit and washing collectors with tubular structure.
- ▶ The washing track has been planned to facilitate the removal of mud from the wheels without damaging them.
- ▶ The length of the tire guides depends on the model.
- ▶ 2 couples of photoelectric sensors or magnetic loops for switching on and off.
- ▶ Lack of water alarm and protection.
- ▶ Electric control panel IP 65 with PLC for the direction and the monitoring of all operative functions inside a metal cabin.
- ▶ The washing plant is built for the prevention of freezing in case of frost conditions.
- ▶ The oscillating side spray nozzles height can vary from 50 cm to 150 cm.
- ▶ There are no mechanical devices for wheels washing.

Clean® is continuously involved in research, development, planning and in the construction of innovative and personalized plants.



Components and technical Data mod. 400 FEC

Side washing pump - 1.500 l/min, 3 bar, 5 Kw.	n.	01
Tire tread washing pump - 2.000 l/mins, 3 cafes, 8,8 kW.	n.	01
Water treatment return pump - 1.800 l/mins, 5 kW.	n.	01
Power consumption.	kW	19,5
Washing power (depending on the quantity of residues to be removed from the tires).	Washing /hour	≈ 20÷30
Wastewaters treatment with Decantation, Addition of the flocculent, Clarification and Sludge extraction.	n.	01
Washing time (depending on the type and quantity of material to remove).	Seconds	20÷180
Treatment tank (in carbon steel painted with epoxy products ≈ 25 m ³) for sand-trapping, sand and sludge extraction, de-oiling and water accumulation.	n.	01
Polyelectrolyte dosing station.	n.	01
Sludge extraction plant with chain conveyor equipped with shovels and cups: variable-speed motor power 0,75 kW, 400 Vs, 3F.	n.	01
Tank or big sack for sludge collection.	n.	on request



Installation functionality

- ▶ The mobile wheel washing plant consists of a structure with collectors and fixed washing nozzles. The starting of this plant is activated by photoelectric sensors.
- ▶ The first couple of sensors detects the vehicle, the pumps start and pressurize the collectors making the water flow out through the spray nozzles.
- ▶ The washed vehicle, exiting from the wheel washing plant, activates the second couple of photoelectric sensors and the washing pumps are switched off and remain ready for the following washing.
- ▶ The speed of the vehicle inside the wheel washing plant depends on the driver, who will have to pass slowly and, if necessary, to stop every now and then to allow a perfect washing of the wheels (front and rear), for a complete removal of residuals. In any case, the maximum speed allowed inside the wheel washing plant is 3 km/h.

A solution that offers many advantages

- ▶ Maximum water re-use and minimum re-integration. The water can be almost completely recycled. Only the quantity of water lost with the exit of the vehicle and with the discharged sludge has to be reintegrated.
- ▶ With the new sand extraction systems, the costly operations of sand and sludge suction and separation by specific means can be minimized.
- ▶ Carefully designed solutions.
- ▶ Installation and start-up in a few hours.
- ▶ Modular and expandable plant design.
- ▶ The plants can be re-installed in other sites.

Total washing arcs



Wastewater treatment for the re-use of washing water

- ▶ With the new clean® treatment plants, sand and many other impurities are extracted from wastewater.
- ▶ Settlers and sand trap – The extracted sand and sludge are moved directly into a water tank or into a dewatering plant with draining bags or into a filter press plant.
- ▶ Maximum water re-use and minimum re-integration. The water can be almost completely recycled. Only the quantity of water lost with the exit of the vehicle and with the discharged sludge has to be reintegrated.
- ▶ Water clarification can be carried out even if the quantity of sludge is big. This operation is carried out with the help of flocculants. The particular structure of the water tank permits to obtain a perfect clarification.
- ▶ Alternately to the Settler, sludge can be removed with a chain conveyor equipped with stainless steel shovels.
- ▶ Sludge dewatering with a thickener, draining bags, a draining tank or a filter press plant. The choice of the most suitable dewatering system depends on sludge quantity and characteristics.



Depuration process for the re-use of washing water

- ▶ The type of activities carried out determines the composition of the solids in the washing water.
- ▶ The intensity of the washing determines the number of washing cycles.
- ▶ A specific treatment will be proposed on the basis of these data.
 - Sand trapping.
 - Oil separation.
 - Sludge removal.
 - Clarification.
 - Heavy metals removal.
 - Sludge dewatering.



Customized treatment for polluted washing water:

- ▶ In case of extremely muddy washing water, with suspended solids of different origins and characteristics (i.e.: clay, carbon, organic substances, etc.) the purification plant is more complex and it varies according to the features of the substances to be removed.
- ▶ According to the activities carried out, the vehicles release in the washing water different kinds of polluting substances, which, to be removed, require specific treatments, either chemical/physical or biological. In these cases the treatment plants installed are designed to obtain perfectly clarified washing water, which can be re-used, in accordance with the drainage system regulation.



Wastewater treatment and purification of the washing water



OUR OBJECTIVES



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