

How to effectively clean a mixing hopper in cement production

A solution designed by PNR Italia allows removing resistant residues in a flexible and customized way.



SCENARIO FOR THE SECTOR

Spray nozzles' role in cement production

The first phase of cement production is extractive, obtaining two main components: limestone and clay. Then follows the grinding and drying, in which the raw materials are transformed into a fine powder and sent to storage as homogenized flour.

The compound obtained reaches the furnaces with a temperature of 1450°C, turning into the "clinker." The final phase grinds the clinker with gypsum and any secondary constituents.

PNR Italia produces spray nozzles, tank washing nozzles, atomizers, and accessories for all stages of production in cement plants, from water injection to improve the grinding process up to the cooling of the gases and the abatement of the harmful substances inside the scrubbers with injection lances.

THE PROBLEM OF OUR CLIENT

A cement machinery manufacturer contacted us because they needed to wash residues from a liquid concrete discharge cone periodically.

Since the washing was carried out cyclically to avoid dry and stubborn residues, they needed a static washing system to be put into operation when required.

PNR ITALIA SOLUTION

PNR Italia's technical office designed a washing system for the discharge cone made by a circular manifold at the top of the cone, equipped with 6 full cone D nozzles and swivel joints.

The manifold houses the 6 nozzles with 120° a spray angle of 120 and oriented with the swivel joints.

INDUSTRY

Cement plants



APPLICATION

Washing



PROBLEM

Washing of persistent residues from a drain cone



SOLUTION

Washing plant consisting of a circular manifold and spray nozzles

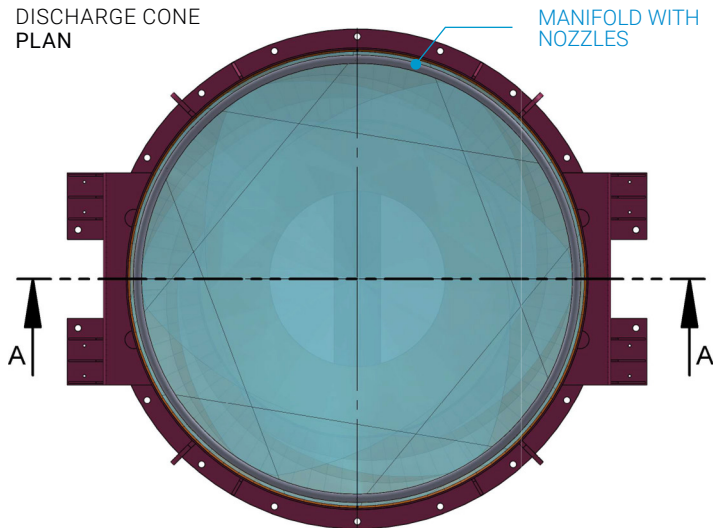


ADVANTAGES FOR OUR CLIENT

Thanks to PNR Italia's washing solution, the customer obtained a flexible and adaptable washing system for his cleaning needs, which can be activated at any time.

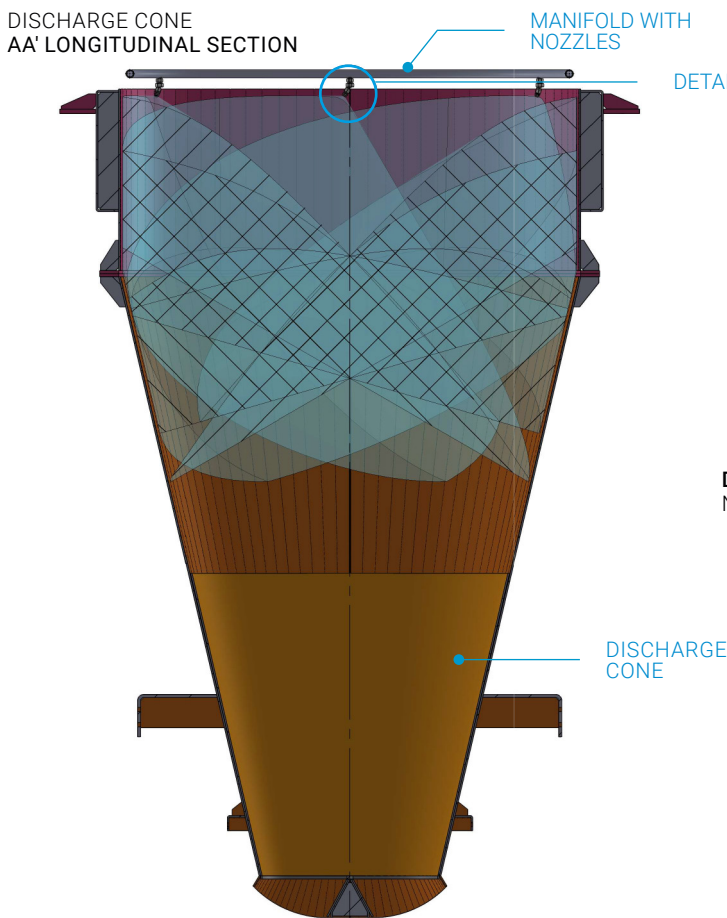
The drain cone can be washed as needed effectively, preventing dry concrete residues that are difficult to remove.

DISCHARGE CONE
PLAN



MANIFOLD WITH
NOZZLES

DISCHARGE CONE
AA' LONGITUDINAL SECTION



MANIFOLD WITH
NOZZLES

DISCHARGE
CONE

MIXING HOPPER
PLAN AND LONGITUDINAL SECTION

FOCUS ON THE PRODUCTS



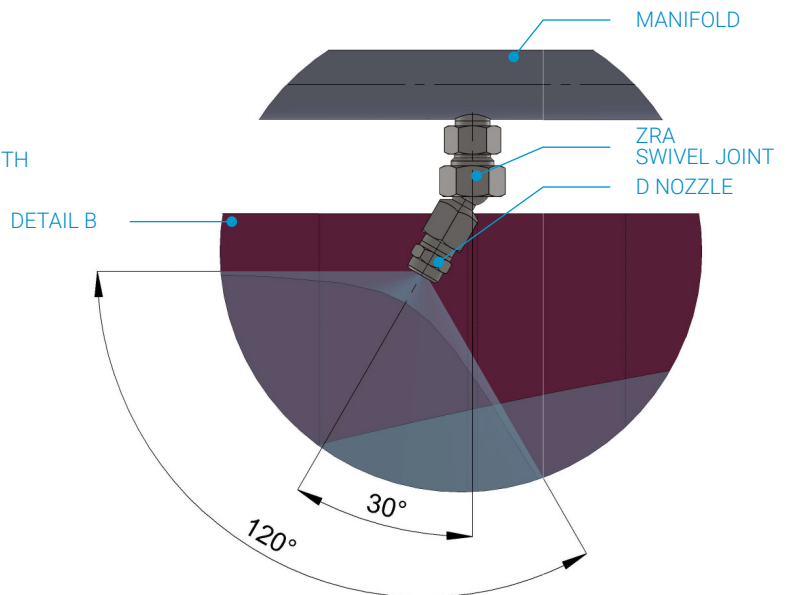
D
FULL CONE NOZZLE

Full cone D nozzles with large pass-through X-vane offer a full range of spray angles, flow rates ranging from 1.18 to 1.420 liters per minute, and connections from 1/8" to 4".



ZRA
STANDARD SWIVEL JOINT

ZRA are standard swivel joints for manufacturing plants requiring product diversification. The fitting and adjustment of the joints can be done easily by tightening the hexagonal screw cap.



MANIFOLD

ZRA
SWIVEL JOINT
D NOZZLE

DETAIL B

DETAIL B
NOZZLE AND SWIVEL JOINT