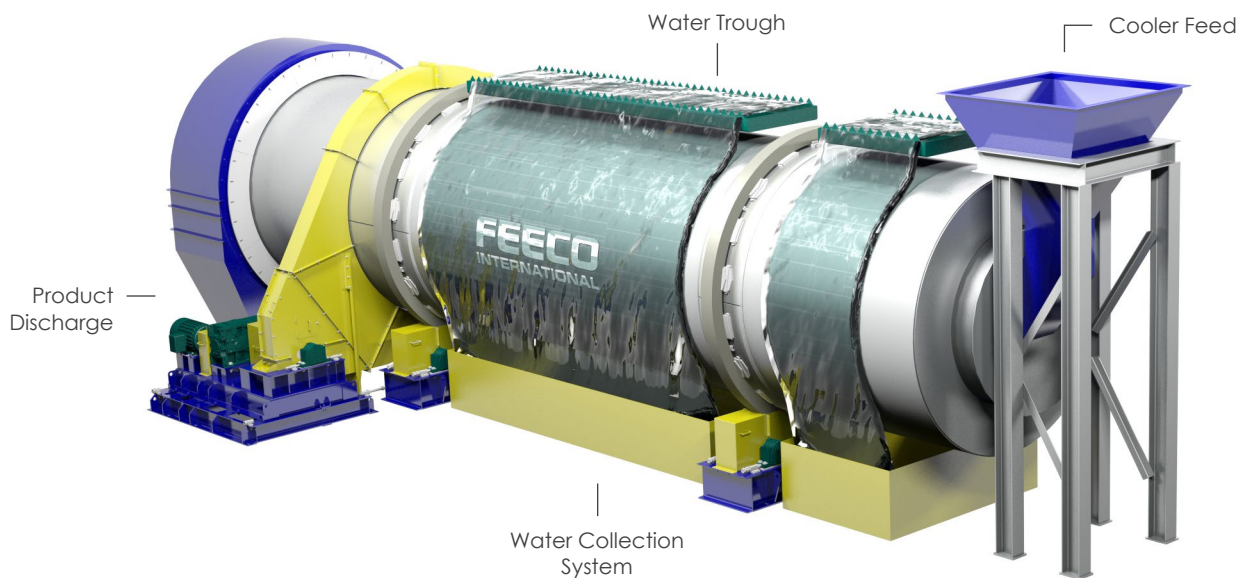


Indirect coolers, or indirect water deluge coolers, are a specialized type of industrial cooler used in applications where the processing environment must be tightly controlled, or when the material to be processed risks entrainment in a direct processing configuration.

This is commonly seen with fine or lightweight materials that could be picked up and carried out in the presence of an air stream. Similarly, materials that may oxidize or burn in the presence of a cooling air must be carefully processed in a controlled environment in order to avoid such issues.



## HOW IT WORKS

Unlike their direct counterparts, indirect water deluge coolers avoid contact between the cooling medium and the material being processed. Instead, material is tumbled through a sealed rotating drum, which is externally bathed in cool water, as shown at right. The water cools the exterior of the drum, which in turn cools the material within.

A water collection system collects the used water and passes it through a heat exchanger to re-cool it if needed. It is then recirculated to the trough above the drum for reuse in the bathing process.

Indirect water deluge coolers are typically constructed of stainless steel in order to protect the drum from the constant exposure to water, which can result in corrosion. Specialty alloys can be employed at the inlet of the drum to accommodate materials that are coming in at especially high temperatures.

