

Knowledge  
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Since 1975



**PACKMAN**  
Industrial Group



External SuperHeater  
powered by PACKMAN industrial group



# External Superheater

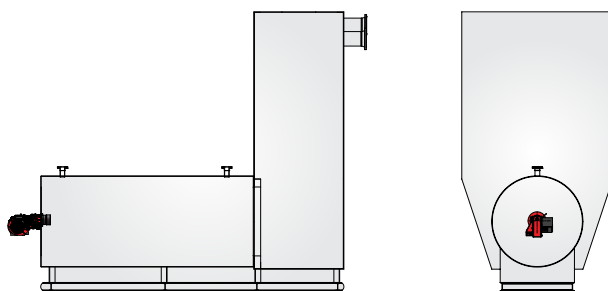


## Product Description

External Super heater or Radiative superheaters are used as the first heat transfer surfaces after the furnace. Often a platen arrangement is preferred to create a fouling-resistant construction.

Superheaters are the hottest heat transfer surfaces in the boiler, so they are often built with temperature-resistant alloys. As these superheaters operate at flue gas temperature ranges of 800–1400°C, they often need to be built with corrosion resistance in mind. High-grade materials are expensive and require special welding techniques and often heat treatment. Superheater type, design, material, and construction methods always involve compromise to achieve the desired technical level at low cost.

The wall superheater is a special class of superheater. Sometimes part of the superheating surface needs to be located at the furnace proper. The wall superheater surface is used in these applications. A wall superheater is basically a flat panel of joined tubes that hangs either as close to the furnace membrane wall as possible or forms part of the furnace. Sometimes the back-pass side walls form a superheating surface. Typically wall superheaters are the first superheater after the steam drum or the coolest superheater. Design of super heater is according to BS1113 Standard and SA210-C for



Material Properties							
SA210C / ASTM A210 Grade C Chemical Composition							
Carbon Max	0.35%	Phosphorus Max	0.035%	Silicon Min	0.10%	Chromium	N/A
Manganese*	0.29-1.06%	Sulfur Max	0.035%	Nickle	N/A	Molybdenum	N/A
SA210C / ASTM A210 Grade C Mechanical Properties							
Tensile Strength	ksi: 70	MPa: 485	Maximum Hardness	Rockwell B	89 HRB Max.		
Yield	ksi: 40	MPa: 275		Brinell	179 HB Max.		

# PACKMAN GROUP

## History

The Packman Company was founded in February 1975, and was soon afterwards registered in companies Registration Office. In early years the Packman construction and service branch focused on building installations. Different mega power plants were built by cooperating with Brown Boveri and Asseck companies in 1976.

The company started its official activities in construction of High-Pressure Vessels such as Hot-Water Boilers, Steam Boilers, Storage Tanks, Softeners and Heat Exchangers from 1984.

Packman Company is one of the first companies which supplied the high quality and standard hot water boilers to the customers.

Packman has exported its products to countries such as Uzbekistan, United Arab Emirates and other countries in the Middle East. It is one of the largest producers of hot-water and steam boilers in the Middle East.

Now we are proud to announce that the Packman industrial group has five major sub-brands that have product titles in all field of HVAC equipment and engineering services, and we do not know this success except with the help and support of our customers.

1. Construction Services Industry Association
2. Industry Association
3. Construction Companies' Syndicate
4. Technical Department Association
5. Mechanical Engineering Association
6. Engineering Standard Association

### Departements:

#### Sales Deps:

- ⌒ Power Plant & Petrochemical
- ⌒ Industrial
- ⌒ Hospitality Service
- ⌒ Commercial & Residential
- ⌒ Sport Complex & Pool

#### Technical Deps:

- ≡ Manufacturing R&D
- ≡ Innovation Center
- ≡ EPC Execute Unit
- ≡ Product Develop Unit
- ≡ Sales Engineering Dep.

#### Others:

- ≈ After Sales Service
- ≈ Project Control
- ≈ Financial Office
- ≈ Commercial Office
- ≈ Marketing Department



# PACKMAN GROUP Brands



**PACKMAN**  
Industrial Group

Designer&manufacturer of Condensing, Hot Water, Steam, Hot Oil & Waste Heat Boilers, Heat Exchangers, Autoclave Pressure & Storage Vessels & etc



**GREENMAN**  
Green mindset, green future

Engineering & Designing Commercial Greenhouse Plant, CO2 Dosing System, Flue gas Condenser & Special HVAC Systems, Sustainable Agriculture & etc



**ROMAN**  
Water solution

Designer&manufacturer Reverse Osmosis Plant & Package, Water Treatment, Softener & Filters and Chemical Dosing Systems & etc



**RAADMAN**  
a look to the future

Designer&manufacturer of Industrial Mono & Dual Block Gas, LPG, Light & Heavy Oil Burners, Premixed & Postmixed Burners, Watertube burners, Process burners, Special application burners & Combustion Solutions & etc



**CHILLMAN**  
Coolest hvac around

Designer&manufacturer of Air & Water Cooled Chillers, Air Handling Units, Fancoil, HVAC Equipment, Cold Storage Room & etc



1. Isfahan Factory



2. Vilashahr Factory



3. Parand Factory



4. Parand (2) Factory



5. Bonyad Factory

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