

<p>Dagangan : DRY COOLING TOWER</p> <p>Nama Perdagangan : Air Cooler Heat Exchanger for General Refinery Service API Standard 661 ISO 13706:2000</p>	<p>Kod Tarif (Perintah Duti Kastam 2012) : 8419.50 100</p> <p>Tarikh Kelulusan : 14 Oktober 2016</p>
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Keterangan barangan :

Barangan adalah dikenali sebagai *Air Cooler Heat Exchanger* yang diimport bersama Accessories. Barangan ini terdiri daripada *bundles of Heat Transfer surface, air moving device (fan,blower or satch), driver or power transmission to rotate fan/blower, plenum and support structure*.

Barangan digunakan untuk *rejecting heat from a fluid to ambient air temperature* dan digunakan di loji petroleum atau *general refinery*. Barangan ini juga dikenali sebagai *dry coolers*.

Air cooler boleh berfungsi dengan dua cara bergantung kepada kedudukan kipas seperti berikut :

- i. Secara "*forced draft*" sekiranya kedudukan kipas berada di bawah *finned tube* di mana angin kipas akan meniup *finned tube* untuk mengeluarkan haba; atau
- ii. "*induced draft*" sekiranya kipas berada di atas *finned tube* di mana angin akan disedut dari *finned tube* untuk mengeluarkan haba.

Barangan yang diimport pihak syarikat ini berfungsi secara ***induced draft*** iaitu sebagai "*pressure vessel which cools a circulating fluid within finned tube by forcing ambient air over the exterior of the tubes*".

Pihak pengimport menjelaskan perbezaan di antara *Dry Coolers* dan *Cooling Towers* adalah berasaskan keperluan penggunaan air. *Dry coolers* tidak memerlukan air bagi tujuan penyejukan tetapi udara ditiupkan kepada *heat exchanger in order to remove the heat from the liquid in the system*.

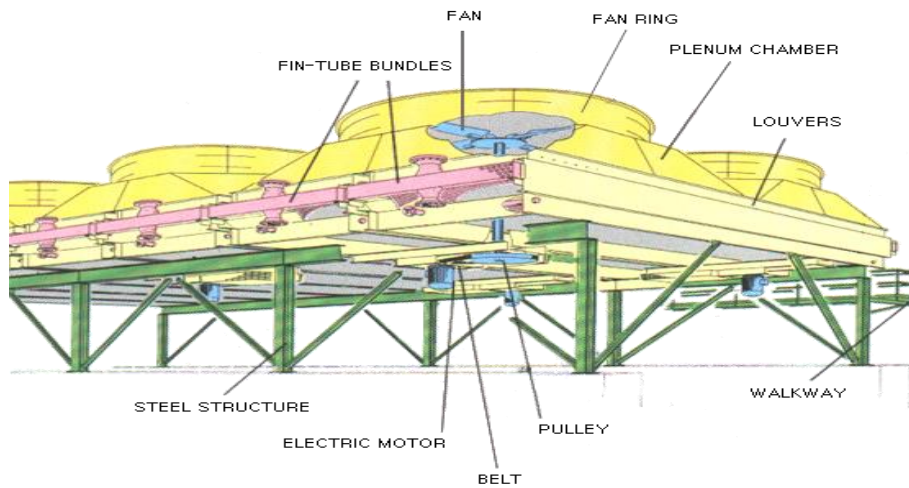
Barangan juga didakwa berbeza dengan *cooling tower* kerana ia tidak menggunakan proses *evaporation* yang melibatkan penggunaan air. *Dry cooler* yang menggunakan air hanya dapat menurunkan suhu hingga ke suhu persekitaran (*ambient temperature*) sahaja. Sekiranya digunakan di dalam cuaca panas, *dry cooler* yang menggunakan air tidak dapat berfungsi dengan efektif.

Pihak syarikat menerangkan sebab mereka menggunakan Air Cooled Heat Exchanger adalah kerana :

- i) Kos yang lebih efektif
- ii) Ia adalah "*green solution*" jika dibandingkan dengan *cooling tower* yang menggunakan banyak *auxiliary water* yang hilang kerana proses *drift* dan *evaporation* selain daripada keperluan *water treatment* menggunakan bahan kimia.

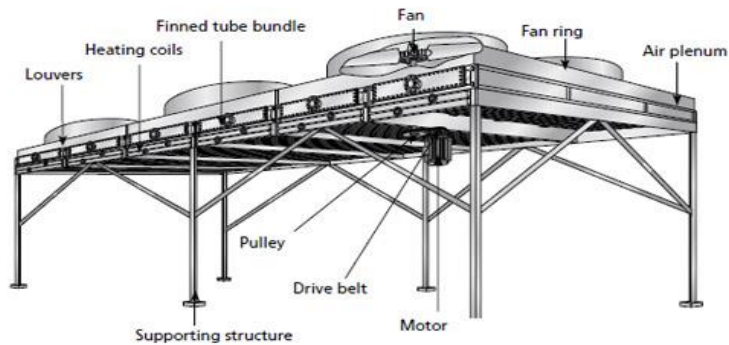
Syarikat juga mendakwa spesifikasi barangan *Air Cooled Heat Exchanger* juga boleh dirujuk berdasarkan ISO 13706 : 2000, di bawah API Standard 661, Fifth Edition.

Gambar di bawah merupakan contoh *air cooled heat exchanger* seperti yang diimport syarikat.



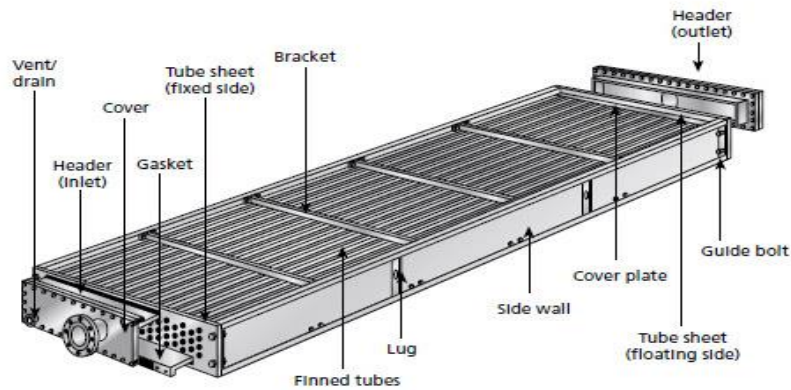
Maklumat *technical* data bagi barangan adalah seperti berikut :

Gambarajah:



Air Cooler Bank

The air cooler bank essentially consists of finned tube bundles, fan rings, axial fans with suitable drive units and a supporting structure. It can be equipped individually with maintenance platforms, louvers and other equipment as requested by the customer.



Finned Tube Bundle

A finned tube bundle consists of finned tubes (in special cases unfinned tubes are also possible), the headers for distributing the product and a supporting frame.

Air Cooled Heat Exchanger, which is widely used as a Steam condenser by using air instead of cooling water that cannot be used in some areas such as urban waste incinerating facilities.

Fakta

Barangan telah dirujuk kepada Jabatan pakar bagi mendapatkan pendapat pakar kejuruteraan dan barangan disajhkan adalah sejenis **Dry Cooling Tower**.

Ketetapan

Ketua Pengarah Kastam memutuskan barangan tersebut sesuai diperjeniskan di bawah kod tarif **8419.50 100** (PDK 2012) sebagai **Dry Cooling Tower** berdasarkan alasan-alasan berikut:

Berdasarkan fakta dan keterangan di atas, barangan dikenali sebagai *Air Cooled Heat Exchanger* atau *Dry Cooling Tower* yang berfungsi by *heat transfer through a surface that separates the working fluid from ambient air, such as in a tube to air heat exchanger, utilizing convective heat transfer*. Barangan tidak menggunakan proses *evaporation* yang kebanyakannya digunakan di *wet cooling tower* dan *closed circuit cooling tower* atau *hybrid cooling tower*.

Barangan digunakan untuk *rejecting heat from a fluid to ambient air temperature* dan digunakan di loji petroleum atau *general refinery*.

Keputusan pakar juga mengesahkan barangan adalah sejenis *Dry Cooling Tower*.

Berdasarkan kaedah pemasangan dan penggunaan barangan di bahagian atas loji petroleum *refinery* secara horizontal menunjukkan elemen *tower structure*.

Dry Cooling Tower seperti di website <http://www.drycoolingtower.co/air-fin-cooler.html> yang menerangkan seperti berikut :

*Air Fin Coolers (or) Fin fan Cooler are the same Air-cooling equipment. In a quantity of part of the world Air cooled Heat Exchangers are also known as Air Fin Coolers. Simply says Air Fin Coolers, Fin fan Cooler, Coil Cooler, **Dry Cooling Tower is the additional names of Air-cooled Heat Exchangers.** It also used for Heat rejecting from a hot process fluid to the surrounding atmosphere by using the atmospheric air as a cooling media.*

The Air Fin Coolers are basically designed with several rows of finned tubes in a series of exterior and required numbers of fans are used to move the low temperature atmospheric ambient air over the finned tube coil surface in order to cool the hotter fluid media. It is nothing but an extended type of industrial or automotive radiators.....

These Air Cooled Type Heat Exchangers are used in oil, gas, petrochemical, refinery, and power and condensation plants. All type of fluids in process industries are cooled in Air Fin Coolers with the use of atmospheric air, as the cooling media which resulting in economy in running costs. Air cooled Heat Exchangers are used for high pressure, high temperature applications in process industries with metallurgy suitable for highly corrosive fluid medias.

Barangan mendapat liputan dalam PDK 2012 seperti berikut :

84.19 -Machinery, plant or laboratory equipment, whether or not electrically heated (excluding furnaces, ovens and other equipment of heading 85.14), for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, distilling, rectifying, sterilising, pasteurising, steaming, drying, evaporating, vaporising, condensing or cooling, other than machinery or plant of a kind used for domestic purposes; Instantaneous or storage water heaters, non-electric.

- Instantaneous or storage water heaters, non-electric :
- 8419. 11 - - Instantaneous gas water heaters
- 8419.19 - - Other
- 8419.20 Medical, surgical or laboratory sterilisers
 - Dryers :
- 8419.31 - - For agricultural products
- 8419.32 - - For wood, paper pulp, paper or paperboard
- 8419.39 - - Other
- 841 9.40 - Distilling or rectifying plant
- 8419.50 - Heat exchange units**
 - 100 - - Cooling Tower**
 - 900 - - Other
- 8419.60 - Machinery for liquefying air or other gases
 - Other machinery, plant and equipment :
- 8419.81 - - For making hot drinks or for cooking or heating food
- 8419.89 - - Other
- 8419.90 - Parts