



Maximum cooling efficiency at Mecca

Jamarat, Saudi Arabia



Millions of Muslims from across the world make the annual journey to Mecca from all over the world. They are on a journey, a pilgrimage, to Mecca, called Hajj, which is mandatory for all Muslims to make at least once in their lifetimes, provided they are physically and financially able to make the pilgrimage. It takes place during Dhu al-Hijjah, which is the final month of the Islamic calendar.

Mecca is the place where the Islamic religion started. It is where the Prophet Muhammad was born and received the first revelations from Allah, which become the Koran.

There are different stops and rituals during the Hajj, and one stop is at the three pillars, Jamarat, in the tent city of Mina. This is where pilgrims throw stones at pillars that stand at the place where Satan is believed to have tempted the prophet, Abraham.

These three pillars are named:

Jamarah-al-Oola or Jamarah Sughra (the first and the smallest Jamarah)

Jamarah-al-Wusta (the middle Jamarah)

Jamarah-al-Uqbah or Jamarah-al Kubra (the last and the largest Jamarah)

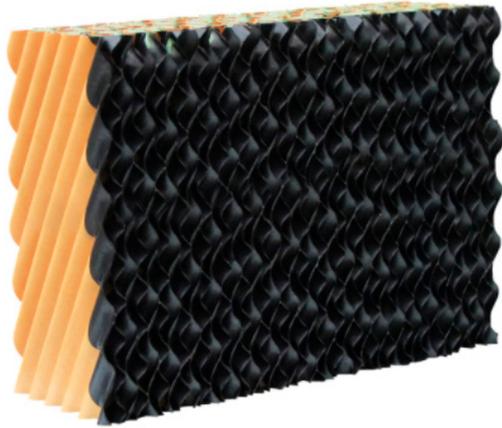
The pilgrimage is undertaken by more than two million people each year, which puts a lot of pressure on the infrastructure. An average summer day features hot and dry air, and temperatures that reach up to 50 degrees Celsius.

Case study

- Jamarat holy site receives cooling system revamp

Advantages:

- Munters' CELdek pads provide maximum cooling
- Made from special engineered cellulose paper
- 5000 CELdek pads were installed on site



Munters' CELdek evaporative cooling pads.



Comfortable environment for Hajj pilgrims

When Munters' Kingdom of Saudi Arabia distributor Alfaneyah Electromechanical Company Ltd. was contacted by Makkah Region Development Authority (MRDA), there was limited airflow in all the three Jamarah pillars due to blockages in the current pads, which could not handle the difficult conditions.

This resulted in an uncomfortable environment for the pilgrims, who spent hours inside the buildings.

The Munters' solution

To solve this issue Munters' CELdek evaporative cooling pads were recommended since they provide maximum cooling efficiency.

The CELdek pads are designed to provide maximum cooling, low pressure drop, and years of reliable service. They are made from special engineered cellulose paper that is chemically treated to resist deterioration.

The cross fluted, unequal angle pad design promotes the beneficial mixing of air and water for optimum cooling. This unique design also functions to continually direct more water to the air-entering face of the pad, where the air is the hottest, driest, dirtiest and the most intense evaporation takes place.



Reliable cooling in harsh conditions

In the first phase, nearly 1200 CELdek pads were transported to the site in twelve large trucks over two days and installed to cover 140.000 m². The following year, phase 2 began and another 3800 CELdek pads were transported using twenty trucks over three days to cover 164.000 m². The total area is spread over three buildings and four floors.

“Now the area is cool with a designed airflow that provides a comfortable environment for the Hajj pilgrims, even when it is crowded,” says Mohamed Suhail, Sales Engineer at Alfaneyah Electromechanical Company Ltd.

The CELdek pads have proved to be very useful in environments with harsh conditions. MI-T-edg by Munters is a tough and resilient optional edge treatment applied to the air-entering face of the CELdek pad. This offers protection to the CELdek pads from the damaging effects of severe weather and long-term exposure to UV light. MI-T-edg protective edge coating extends the life of the pad compared to non-treated pads and makes it the strongest, most weather-resistant edge coating available.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com

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