



# Bulk Air Cooling (BAC)

**IWC is the global specialist in designing and building bulk air coolers for the mining sector.**

With over 30 years of experience in developing ventilation and cooling technology, we are uniquely positioned to provide bespoke solutions for your cooling needs.

Underground mining operations make use of some of the largest ventilation and cooling systems in the world, incorporating various types of cooling technology such as evaporative condensers, refrigeration plants, pre-cooling and condenser cooling towers as well as bulk air coolers.

We offer a range of solutions from stand alone bulk air coolers and condensers, through to complete turnkey packages.

Our range comprises of both cross and counter flow packed bulk air coolers in either forced or induced draft configurations. Each bulk air cooler is custom designed to suit the mines requirements.

BAC's can be supplied in a number of different configurations and materials of construction. Options include the following configurations:

- Counter Flow (most common)
- Cross Flow

These can be provided in either forced or induced draught configurations.

Field erected BAC's can be constructed of various materials and would typically include:

- Cast in situ concrete
- Clad steel (hot dip galvanised or painted)
- Clad pultruded fibreglass structures

Modular BAC's are typically used for smaller capacity installations and are usually of the forced draught, cross flow design and are available in single or two stage configuration. These BAC's are designed to be easily transported to site in large sub assemblies making for a simple site installation that can be easily relocated if required.

IWC is proud to be associated with South African gold and platinum mining industry and has provided a number of large, field-erected condenser cooling towers as well as both surface and underground bulk air coolers.

Some notable projects include South Deep - South Shaft in Rustenberg, Sibanye - Kloof No 4 Shaft in Rustenberg and ROXGOLD in Burkina Faso.

The BAC selection is usually an iterative process with the chiller supplier to get to the best COP etc. but as a minimum, we need the following to design the BAC.

	PARAMETER		
<b>AIR SIDE</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Units</b>
Dry bulb temperature	x		°C
Wet bulb temperature	x	x	°C
Barometric pressure		x	kPa
Mass flow (Ambient)		x	kg/s
<b>WATER SIDE (Evaporator)</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Units</b>
Temperature	x	x	°C
Flow rate		xx	kg/s
Heat exchanged		xxx	kW

