

SUBMERSIBLE MOTOR ENGINEERING



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Undersize Cables connected to Submersible Motors

1/12/10

The standard supply cables attached to an SME motor are correctly sized – **not undersized** - for the following reasons.

The cables close to the motor will be submerged in water so they will get extremely good cooling and typically the current density can be double what it would be in air.

The cables above the pump will probably be in air - not water - and have to be rated accordingly.

Most cable suppliers advise a current rating for their cables based on a 40 Deg.C. ambient in air. The submersible cable suppliers that SME works with, (Siemens, etc.), specify that their cables are suitable for use in water - but don't give a current rating when used in water.

Sometimes the space between the pump and the side of the well is tight and there is not enough room for large cables to fit past the pump - but there is enough room for large cables above the pump.

Quite often it would be impossible to fit the large cables directly into the motor as there is not enough room on the drive end face of the motor.

Because the cables coming out of the motor are short there is no significant volt drop issue across these short cables.

The standard cable sizes for SME motors are specified in the SME Submersible Motor brochure.

(All other submersible motor suppliers will offer similar sized cables - for the same reasons as above).