

# Hydro Generator Stator Coil and Bar Manufacturing

## ABB Electrification Industrial Solutions



ABB's manufacturing facility located in Beloeil, Quebec, Canada is a world-class manufacturer of hydro generator stator windings. ABB offers both coil and bar manufacturing capabilities to meet our customer's needs.

Our Service team works directly with customers to replace and/or upgrade stator windings from all major original equipment manufacturers (OEM) using ABB's proprietary insulation systems.

ABB offers a class F insulation system, HV600, for coils and bars in a wide range of voltages, up to 15 kV. Our manufacturing facility is currently capable of producing coils/bars up to 120 inches (304.8 cm) in core length.

Coil/bar manufacturing cycle times typically range from 6-8 weeks. With three independent production lines ABB is well positioned to provide immediate service for forced outages.

Our manufacturing facility is focused on quality. This begins with our facility being ISO 9001 certified. Quality continues into our materials, processes, and people. ABB Hydro Generator windings are manufactured to the highest standards to maximize winding performance.

Every coil/bar produced in our facility is assigned a serial number allowing that coil/bar to be tracked through each production step. This tracking system allows data related to coil/bar manufacture to be recorded for each coil/bar including; tape types, number of tape layers, batch number, and operator number among other information.

Most importantly, our tracking system allows ABB operators to verify compliance to our manufacturing plan.

ABB's focus on quality continues with validation of the manufacturing process. ABB performs a battery of standard tests on each coil/bar to ensure that the coil/bar will fully meet our customer's expectations once it is installed. Where applicable, these tests are performed in compliance with the latest IEEE test specification.

ABB also offers optional testing to align with the needs of particular customers. Table 1 summarizes both the standard and optional tests available. Finally, as part of our quality process the customer is given a report summarizing all the data and testing performed on their new coils/bars.



### Stator Coil / Bar Validation Testing

Table 1

Standard Tests	Optional Tests (H.V. Insulation Only)
Sequencing check of shape in mock stator	Thermal Cycling Testing
Tap Test	Destructive or "Puncture" Test
Strand Test	Partial Discharge Test
Strand Continuity Check	Voltage Endurance Testing
Surface Resistivity (4.2 kV and up only)	Corona Scope or "Lights Out/Black Out" Test
Tip-up Test (H.V. insulation only)	
Surge Voltage Test (Coils only)	
Final Hi-pot Testing	
Dissipation Factor Test (H.V. insulation only)	
Dimensional Verification	

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