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REVISIONS										
Rev	Description	Rev'n by	App Sud	App PC	App Thom	App VB	App LH	App Clyd	Appr Act	Issue Date YYYY/MM/DD
1	Specification updated and format and number revised. Previous number 3002-1.01.610	BML 2011/11/01	BML 2011/12/18	Pending	Pending	Pending	Pending	Pending	Pending	2012/04/26
2	Approved for use in Thompson – No Changes	BML 2011/11/01	BML 2011/12/18	Pending	GS 2012/08/09	Pending	Pending	Pending	Pending	2012/08/09
3	See Appendix A	MDF 2014/12/22	MDF 2012/12/22	Pending	Pending	Pending	Pending	Pending	Pending	2014/12/23
4	See Appendix A	BML 2015/12/14	BML 2015/12/14	Pending	Pending	Pending	Pending	Pending	Pending	2015/12/14
5	Spec approved for MB Operations	N/A	N/A	N/A	HM 2016/06/06	N/A	N/A	N/A	N/A	2016/06/06

Sud = Sudbury, Ontario, PC = Port Colborne, Thom = Thompson, Manitoba, VB = Voisey's Bay, LH = Long Harbour, Act = Acton, England, Clyd = Clydach, Wales, N/A = Not Applicable

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1.0 PURPOSE

This specification describes the minimum requirements for mechanical equipment installation. This specification is intended to describe in general mechanical equipment installation and may be supplemented by specifications for specific equipment.

Mechanical installation includes:

- Assembly, if required and installation of all equipment either Vale-supplied or contractor-supplied
- The unloading and storage of equipment
- Moving equipment from storage to required location
- Crane, rigging, temporary supports and protective materials and devices
- Lubrication, testing and cleaning materials and devices
- Bringing the equipment up to acceptance by Vale

"Equipment" in this specification means: all process mechanical equipment including rotating and reciprocating machinery, apparatuses, vessels, tanks, chutes, launders, hoppers, conveyors, and also includes drives, guards, piping, ducting, mounting devices and the like forming part of the equipment.


2.0 APPLICATION

Engineering design and specifications only approved for use with Vale Canada Limited, Thompson Operations or its successor or assignee. Any use a third party makes of this document or drawing, or any reliance on or decisions to be made based on it, beyond its use for Vale Canada Limited purposes are the responsibility of such third parties. Vale Canada Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this document or drawing beyond those specified herein.

This specification, applies at any Vale locations indicated with approval on the cover page, with the following exceptions:

2.1 EXCEPTIONS

None.

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3.0 REFERENCE DOCUMENTATION

The following documents were used in the development of this document or have instructions and procedures applicable to it. They shall be used in their most recent revision.

W210	The Workplace safety and health act Manitoba
TH-SPEC-31001	Machinery Protection
CSA Z432	Safeguarding of Machinery
CSA W59	Welded Steel Construction
CSA S16.1	Limit States Design of Steel Structures
ASTM A325	Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
85-401-F-11986	Standard Fan Support
85-401-F-11988	Vent Fan Support Bracket Detail

The following drawings form part of this specification:

AM1.12 Auxiliary Fan Silencer Hanging – Mines engineering policy was not approved by CE.

4.0 SUBMITTALS


For contractor-supplied equipment submit 2 complete sets of vendor drawings, installation, operating and maintenance instructions (including lubrication requirements) and parts lists four weeks prior to shipment of equipment.

Retain one complete set of the vendor drawings and instructions for installation.

Upon completion of the work, submit one complete set of drawings, as well as installation, operating and maintenance instructions and parts lists for all equipment, including "as-built" revisions.

4.1 STEELWORK

Conform to the requirements of CSA S16.1 for structural and miscellaneous steelwork. Conform to requirements of CSA W59 for welding. Use bolted connections for field assembly, unless directed otherwise. Notify Vale Representative prior to welding to existing structural steel. Use ASTM A325 bolts, nuts and washers unless noted otherwise.

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4.2 LUBRICANTS

In accordance with manufacturer's recommendations unless otherwise directed by the Vale Representative.

5.0 STORAGE AND HANDLING

Retrieve equipment from storage areas. Unload equipment from carrier vehicle and move to required location. Unless otherwise directed by Vale Representative.

6.0 EXAMINATION

Prior to commencing installation, thoroughly examine other work upon which mechanical equipment installation is dependent. Report deficiencies and propose adjustments to the Vale Representative. Obtain written authorization before proceeding.

Pre-examine equipment in storage to confirm that the dimensions are in accordance with the manufacturer's drawings.

7.0 PREPARATION

Prepare surfaces and bases as required to receive mechanical equipment. Remove all grease, dirt, rust, oil and loose material from the underside of the equipment baseplates, concrete bases and steel supports.

Ensure that the surface of the base has been properly finished to receive the equipment.


Before placing equipment on steel supports ensure that contact surfaces with the equipment are properly prepared and cleaned.

8.0 INSTALLATION

For Vale supplied equipment, Vale will furnish one complete set of vendor drawings and installation, operating and maintenance instructions.

Contractor to supply all material and equipment not furnished by Vale and necessary to complete the work, unless directed otherwise.

Supply shall include but not be limited to: all miscellaneous steel, bolts, gaskets, welding equipment and materials, as well as touch-up paint and the like not specifically shown on the project drawings or supplied with the equipment, as required to complete the installation and the work.

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Assemble and install equipment in proper location, position and orientation in accordance with the manufacturer's instructions and the project drawings.

Label tanks, vessels and chemical reactors with the name of the product they contain. Labels must be easily identifiable, and durable in the environment for which they will be used.

Accurately mate and assemble component parts and subassemblies.

Unless indicated otherwise, level equipment baseplates to within 0.002 inches per foot and soleplates to within 0.001 inches per foot.

Align equipment true to required lines and elevations as indicated on project drawings.

Install driver and driven equipment true and in accordance within acceptable tolerances as indicated on project drawings.


Connect piping and ductwork only after the equipment is in final position.
 Connect piping and ductwork so that no stress is transmitted to the equipment.
 Properly install and secure guards per CSA Z432 and VALE TH-SPEC-31001. Report any damaged, missing, or non-compliant guards to Vale Representative.

Protect equipment against damage and ingress of foreign matter. If equipment protection appears to have been compromised, then open for internal examination. This is to be done at the Vale Representatives' discretion. If equipment is found to have been damaged, then report to Vale Representative. Initiative is to be taken to repair, return, clean, re-assemble, etc., the damaged equipment to 'make good'. This is to be done at no additional cost to Vale.

Service and lubricate equipment in accordance with the manufacturer's instruction and make ready for operation. Ensure grease points and lubrication devices operate correctly.

Take special cleanliness precautions during hydraulic equipment installation. Properly install filters and strainers. Set drives to operate in proper direction.

Underground hanging fan installations shall be installed in accordance with standard drawings 85-401-F-11988 and 85-401-F-11986.

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9.0 INSPECTION AND TESTING

Ensure equipment is properly installed and serviced prior to start up. Record initial alignments of shafts, couplings, bolt torques and the like. Notify the Vale Representative when equipment is ready for startup and commissioning.

Do not start equipment until instructed by the Vale Representative.

Assist and provide tools and instruments as required to commission and performance test the equipment.


10.0 TOUCH-UP PAINT

Repair damaged paint. Use paint compatible with and matching the original equipment paint in color and quality. Ensure bonding surface is clean and free of debris.

11.0 APPENDICES

Appendix A: Revision and Transition Notes

Appendix B: Keywords

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Appendix A: Revision and Transition Notes

(Revisions are listed in reverse chronological order with the most recent revision at the top. Revision notes describe: what was changed, why it was changed, and the plan to implement the change, including whether changes are retroactive)

Revision 5

Approved for Manitoba Operations

Removed the Ontario standard drawings:

85-401-F-11986 Standard Fan Support

85-401-F-11988 Vent Fan Support Bracket Detail

Added follow AM1.12 Auxiliary Fan Silencer hanging-note about mines engineering approved.

Revision 4

Drawing 99-999-F-004162 revised as follows:

Added vendor supplied chain guide brackets to drawing.

Changed chain tie-back bolt from 5/16" x 2 1/2" long to 3/8" x 3 1/2" long.

This revision is applicable for any installations from this date forward. (Dec 14, 2015)

Revision 3

Drawings 99-999-F-004162 and 99-999-F-004420 area number changed from 686 to 999 and the drawings are now part of this specification. Reference to the drawings added in underground hanging fan installation note in Section 8.

Revision 2

Approved for use in Thompson, MB

No changes.

Revision 1

Document format and number changed due to Vale Engineering Document Program changes in 2011. Previous Standard number 3002-01.01.610 Rev 4. Specification updated.

Appendix B: Keywords

3002-01.01.610

SPEC-30001