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		Rev: 01
		July 2016
KLM Technology Group #03-12 Block Aronia, Jalan Sri Perkasa 2 Taman Tampoi Utama 81200 Johor Bahru Malaysia	Grout Specification (PROJECT STANDARDS AND SPECIFICATIONS)	

KLM Technology Group has developed; 1) Process Engineering Equipment Design Guidelines, 2) Equipment Design Software, 3) Project Engineering Standards and Specifications, and 4) Unit Operations Manuals. Each has many hours of engineering development.

KLM is providing the introduction to this guideline for free on the internet. Please go to our website to order the complete document.

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1.0 Introduction

1.1 Purpose

This Specification provides the technical requirements for the supply and installation of “non-shrink” cementitious grout for equipment and structural column base plates, and epoxy grout for machine base plates and sole plates.

1.2 Scope

- 1.2.1 The contractor shall furnish all equipment, materials, labor, and supervision and shall perform all operations necessary for the foundation surface preparation, formwork, proper mixing, placing, finishing, and curing of “non-shrink” cementitious and/or epoxy grout, hereafter referred to as grout, where indicated on the drawings.
- 1.2.2 Any conflicts or inconsistencies between this Specification, the design drawings, the grout manufacturer’s specifications and recommendations, or other offer documents shall be brought to the attention of the buyer for resolution before the work begins.
- 1.2.3 The following items referenced within this Specification are to be completed by others:
- (a) Installing and leveling structural steel columns, equipment or machine soleplates and baseplates
 - (b) Aligning equipment and machinery.

2.0 References

When adopted in this Specification or in the offer documents, the latest edition of the following codes, standards, specifications, and references in effect on the date of offer award shall be used, except as otherwise specified. Short titles will be used herein when appropriate.

2.1 Specifications

2.2 Industry Codes and Standards

- American Petroleum Institute
 - API 610, Appendix L - *Baseplate and Soleplate Grouting*
- American Society for Testing and Materials (ASTM)
 - ASTM C109 - *Standard Test Method for Compressive Strength of Hydraulic-Cement Mortars (Using 2-in. Cube Specimens)*

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- ASTM C531 - *Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes*
- ASTM C579 - *Standard Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing and Polymer Concretes*
- ASTM C882 - *Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear*
- ASTM C1107 - *Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)*
- ASTM C1181 - *Standard Test Methods for Compressive Creep of Chemical-Resistant Polymer Machinery Grouts*

2.3 Government Regulations

Federal standards and instructions of the U. S. Occupational Safety and Health Administration (OSHA), including any additional requirements by local agencies that have jurisdiction where the grout is to be installed, shall apply, including the following:

- Code of Federal Regulations, *OSHA Part 1910*

3.0 Definitions

buyer: The party who awards the offer to the contractor. The buyer may be the owner or the owner's authorized agent.

buyer's inspector: The authorized representative of the buyer with authority to act in the interest of, and on behalf of, the buyer in all quality assurance matters.

contractor: The party responsible for the supply and installation of the grout.

offer documents: Any and all documents, including design drawings, that the buyer has transmitted or otherwise communicated, either by incorporation or by reference, and made part of the legal offer agreement or purchase offer agreement between the buyer and the contractor.

manufacturer: The party that produces and warrants the performance of the product.