

**MOL Group**

**TECHNICAL SPECIFICATIONS**  
**- ELECTRICAL -**

**LI Brochure register**

**MGS-M-REF- E-LI**

Rev 1.00.01







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## 1. Preface

The specification MGS-M-REF-E is an organic part of the specification system of MOL Group.

The legend of the MOL Group specification system:

<b>MGS-</b>	<b>M-</b>	<b>REF</b>	<b>E</b>	<b>1.1</b>
				Number of Booklet and Chapter
			Volumes: G General T Technology M Machinery I Instrumentation <b>E Electrical</b> C Construction	
		<b>REF</b> Valid for refining area <b>LOG</b> Valid for logistics area		
	<b>M</b> Valid for MOL side <b>S</b> Valid for Slovnaft side			
<b>MOL Group Standard</b>				

This documentation contents all the technical requirements – specified for design, procurement and installation – regarding the electrical systems and equipment in Hungarian MOL Refineries.

The purpose of standard MGS-M-REF-E is to specify and to complete all technical requirements which shall be in line with (laws, government regulations, requirements of directives of European Union, etc.) national and international standards with technical requirements accepted specific needs and MOL experiences in scope of preparation, purchasing, delivery, installation, commissioning, operation, maintenance of mechanical equipment installations in Refineries.

Target of standard MGS-M-REF-E is to ensure uniform solution for design and installations of mechanical equipment for new, reconstructed, modernized of integrated company technological objects or only parts of these objects, which are prepared and realized at different conditions and different time horizons.

## 2. Assignment of obligation

Standards of MGS-M-REF-E are obligatory for Hungarian MOL Refineries employees, as well as for all external parties, which take part in any process of refining projects,

preparation, engineering, delivery, installation, commissioning, operation, maintenance, repairing and installation of relevant technological equipment.

### **3. Substitution of previous standards**

Standard MGS-M-REF-E Technical specifications – Electrical substitutes all previous versions of standards MGS-E or MS-E.

#### 4. Signatory sheet

**Edited and verified by:**

<b>Name of team leader</b>	<b>Organisation</b>	<b>Signature</b>
Imre Buti	MOL DSD PD	

**Edited by:**

<b>Name of team members</b>	<b>Organisation</b>	<b>Signature</b>
Gábor Solti	MOL CS IPI	
István Pásztor	MOL MM	
Ferenc Stefán	MOL REF ENERGY	
Gyula Vigh	SINGLE SERVICE	
Attila Virág	OVIT	

**Approved by:**

<b>László Tóth</b> Head of PE MOL	<b>Zoltán Szerencsés</b> DSD Director	<b>László Galambos</b> MOL REF Director

Százhalombatta, 31.07.2012

List of booklets

Description	Identifier	Rev.:
<b>Brochure register</b>	<b>MGS-M-REF-E-LI</b>	<b>1.00.00</b>
<b>Providing information, basic data formal requirements</b>	<b>MGS-M-REF-E-1</b>	<b>1.00.00</b>
Applicable standards, decree and regulations	MGS-M-REF-E-1.1	1.00.00
<b>Power supply and distribution system data</b>	<b>MGS-M-REF-E-2</b>	<b>1.00.00</b>
Network topology and data	MGS-M-REF-E-2.1	1.00.00
Installation of electric protection, stepping-up	MGS-M-REF-E-2.3	1.00.00
<b>Requirement for electrical buildings and cable routs</b>	<b>MGS-M-REF-E-3</b>	<b>1.00.00</b>
Electrical buildings and rooms	MGS-M-REF-E-3.1	1.00.00
Cable routing and installation	MGS-M-REF-E-3.6	1.00.00
<b>Requirements for electrical equipment, products, cables and accessories</b>	<b>MGS-M-REF-E-4</b>	<b>1.00.00</b>
6kV switchgears	MGS-M-REF-E-4.1	1.00.00
0,4kV main distribution boards	MGS-M-REF-E-4.2	1.00.00
0,4kV auxiliary distribution boards	MGS-M-REF-E-4.3	1.00.00
Uninterruptible power supply systems	MGS-M-REF-E-4.4	1.00.01
Batteries	MGS-M-REF-E-4.5	1.00.00
Frequency converters	MGS-M-REF-E-4.6	1.00.01
Cables	MGS-M-REF-E-4.7	1.00.00
Transformers	MGS-M-REF-E-4.8	1.00.01
Generators	MGS-M-REF-E-4.9	1.00.01
Motors <sup>1</sup>	MGS-M-REF-E-4.10	1.00.01
Electrical heating	MGS-M-REF-E-4.11	1.00.00
Connection to instrumentation and control systems	MGS-M-REF-E-4.13	1.00.00
Cathodic protection against corrosion	MGS-M-REF-E-4.14	1.00.00
<b>Lighting system requirements</b>	<b>MGS-M-REF-E-6</b>	<b>1.00.00</b>
Indoor and outdoor lighting	MGS-M-REF-E-6.1	1.00.00
<b>Earthing and lightning system requirements</b>	<b>MGS-M-REF-E-7</b>	<b>1.00.00</b>
Earthing specification	MGS-M-REF-E-7.1	1.00.00
Lightning protection system specifications	MGS-M-REF-E-7.2	1.00.00
<b>Shock-hazard protection requirements</b>	<b>MGS-M-REF-E-8</b>	<b>1.00.00</b>
<b>Power cut off and interlocking system requirements</b>	<b>MGS-M-REF-E-9</b>	<b>1.00.00</b>
<b>Maintenance distribution system requirements</b>	<b>MGS-M-REF-E-10</b>	<b>1.00.00</b>

<sup>1</sup> Datasheet added in Excel format (MGS-M-REF-E-4.10-D E\_R1.00.00.xls)

Description	Identifier	Rev.:
<b>Electric organization, builders supply requirements</b>	<b>MGs-M-REF-E-11</b>	<b>1.00.00</b>
<b>Supervisory system requirements</b>	<b>MGs-M-REF-E-12</b>	<b>1.00.00</b>
<b>Fire protection systems</b>	<b>MGs-M-REF-E-13</b>	<b>1.00.00</b>
Fire alarm network	MGs-M-REF-E-13.1	1.00.00
<b>Telecommunication, intercom, and camera systems</b>	<b>MGs-M-REF-E-14</b>	<b>1.00.00</b>
Communication system	MGs-M-REF-E-14.1	1.00.00
Public address system	MGs-M-REF-E-14.2	1.00.00
Camera surveillance system	MGs-M-REF-E-14.3	1.00.00
<b>Manufacturing controls and factory take-overs regulation</b>	<b>MGs-M-REF-E-15</b>	<b>1.00.00</b>
<b>Formal and general requirements for electrical design documentation</b>	<b>MGs-M-REF-E-17</b>	<b>1.00.00</b>
Proposal specification	MGs-M-REF-E-17.1	1.00.00
Ordering documentation	MGs-M-REF-E-17.2	1.00.00
Vendor documentation	MGs-M-REF-E-17.3	1.00.00
Types of design documentation	MGs-M-REF-E-17.4	1.00.00
Design requirements, sample drawings	MGs-M-REF-E-17.5	1.00.00
Requirements of text and drawing plan documentation	MGs-M-REF-E-17.6	1.00.00
Specification of as built design documentation	MGs-M-REF-E-17.7	1.00.00
Definition of documentation for operation and maintenance	MGs-M-REF-E-17.8	1.00.00
Uniformized notation system, electric technological sign forming	MGs-M-REF-E-17.9	1.00.00