

|                                                    |                 |              |
|----------------------------------------------------|-----------------|--------------|
|                                                    |                 |              |
| Date:                                              | Appendix No: 20 | Page 1 of 12 |
| Appendix Title: Packing and Marking and Forwarding |                 |              |

**Appendix 20**

**Specification For Parking ,Marking And Forwarding**

|                                                    |                 |              |
|----------------------------------------------------|-----------------|--------------|
|                                                    |                 |              |
| Date:                                              | Appendix No: 20 | Page 2 of 12 |
| Appendix Title: Packing and Marking and Forwarding |                 |              |

## INTRODUCTION

Copper-Moly Concentrator Project and only the parts which are general or related to 4 areas (stock Pile, Grinding, Flotation and Dewatering) will be applicable to the Contractor.

### 1. SCOPE

This Documents shall be read in conjunction with Packing, Marking and Forwarding Specification. In case of any conflict, client can advise.

### 2. GENERAL

- 3.1. The intention of these instructions is to establish the minimum requirements for packaging and marking of MATERIALS, Equipment, Spare Parts and Consumables to be supplied under this Contract and for handling, transportation and extended storage at Site. It shall be the responsibility of the CONTRACTOR to design and provide adequate protection for the above items to be supplied by him and/or his SUB-CONTRACTORS. The CONTRACTOR shall to the extent practicable deliver the imported MATERIALS, Equipment, Spare Parts and Consumables in container.

**Important Note:** The provisions of these instructions and any information and/or figures contained therein are for guiding purposes only, and having regard to the fact that all responsibilities for complete and proper performance of the WORKS shall rest with CONTRACTOR as per the CONTRACT, it is understood by CONTRACTOR that it shall apply the most appropriate methods based on the latest applicable standards during execution of the Project at its own cost and responsibility and shall absorb any and all consequences resulting from improper handling of MATERIALS. It is noteworthy that should the EMPLOYER'S REPRESENTATIVE have any comments as to quality and method of packing of MATERIALS in the course of execution of the WORKS, CONTRACTOR shall duly apply the same.

|                                                           |                        |                     |
|-----------------------------------------------------------|------------------------|---------------------|
|                                                           |                        |                     |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 3 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                     |

3.2 Identification, protection and packaging shall be suitable for the following conditions, as a minimum:

3.2.1 Lifting with forklift truck or hoisting with slings, without the use of spreader bars.

3.2.2 Under-deck Sea voyage to the extent practical.

3.2.3 The possibility of being the lowest package in multiple stacking.

3.2.4 Outdoor/Indoor Storage in accordance with the specifications and requirements of the MATERIALS and SITE conditions.

3.2.5 Color coding of packages for identification, regardless of the package positions.

3.2.6 Adequate identification of the contents of each package both before and after being opened.

3.2.7 Adequate protection of the goods from corrosion, whether open or fully encased.

3.2.8 Sufficient packing or guarding for the prevention of damage, harm, loss, or breakage during handling and transshipment (if transshipment is allowed having regard to the nature of the MATERIALS) by boat, train, truck or other types of carriers.

3.3 Drawings or sketches and descriptions of the packages including approximate sizes and weights of the contents, construction of bracing, MATERIALS and size of bracing and sheathing, as well as the lining or wrapping MATERIALS shall be submitted to EMPLOYER or his appointed representatives(s) for review and comment prior to the construction of the packages.

3.4 The MATERIALS, Equipment, Spare Parts and Consumables to be shipped under the terms of the Contract shall be subject to inspection prior to shipment by an inspector, before such items are put into a case/crate or before a case/crate is closed. However, the inspections made by the said inspector shall not relieve the CONTRACTOR from any of his obligations under the terms of this CONTRACT.

### **3. EQUIPMENT MARKING AND TAGGING**

4.1. A metal name plate, of rust-resistant material, bearing the following minimum information (as applicable) shall be attached to each item of Equipment:

- Manufacturer's name and address
- Serial number

|                                                    |                 |              |
|----------------------------------------------------|-----------------|--------------|
|                                                    |                 |              |
| Date:                                              | Appendix No: 20 | Page 4 of 12 |
| Appendix Title: Packing and Marking and Forwarding |                 |              |

- Rating or capacity
- MATERIAL/Equipment Number and Title

4.2 When the Equipment is disassembled for shipment, or components are fabricated without assembly, each piece shall be adequately identified for the ease of assembly at Site. Each identity mark shall contain the Contract number, Equipment number and either of the following data:

4.2.1 Manufacturer's identification number, or letter designation, appearing on a reference drawing and the reference drawing Number.

4.2.2 Match marking which are identical for each side of Equipment separation and which are non-repeating for the entire lot of Equipment. All match marks to be used shall appear on one or more drawings, which shall be enclosed with the shipment, as described herein.

4.3 Part identification shall be paint stencilled, conspicuously, on large pieces of Equipment. As an alternative for smaller parts, self-adhesive aluminum embossed labels may be used on selected MATERIALS. Small parts shall have a metal tag, wired (only for the parts to be shipped in boxes) or tack welded in place, with the identification stamped or etched.

4.4 Paper or cardboard tags shall not be used.

#### **4. PACKING**

5.1 All items with electrical or electronic components, all instrumentations, all friable MATERIALS or components, all hygroscopic or other Equipment, MATERIALS or other mechanical parts subject to damage by moisture shall be packed in sealed plastic or in sealed aluminum foil and enclosed in skidded and framed cases. For sensitive items such as the precision instruments and electronic Equipment, such cases shall be housed in standard containers for sea and road transport.

5.2 Small parts such as nuts, bolts, washers, small machine parts and similar items shall be corrosion protected, put into sealed plastic bags marked for identification and packed into a drum or box and be included in a larger container.

|                                                    |                 |              |
|----------------------------------------------------|-----------------|--------------|
|                                                    |                 |              |
| Date:                                              | Appendix No: 20 | Page 5 of 12 |
| Appendix Title: Packing and Marking and Forwarding |                 |              |

5.3 Structural fabrications, except as included above, with projections subject to damage on impact, or with shapes unsuited to stacking and bulk MATERIALS such as pipes smaller than 100 mm (but not fittings), shall have suitable corrosion protection and be enclosed in skidded open crates, fastened securely in place.

5.4 Structural steel shapes, plates, knocked down vessel sections and similar components not otherwise limited above, shall be formed into a unit package, by tack welding braces and suitable spacers, and fastened to a pallet or skid base. Only sections of comparable size and length shall be combined into one package.

Provision shall be made to prevent individual pieces from moving in a longitudinal direction.

5.5 For the pieces which are not skidded, provisions shall be made for safe lifting by cables, i.e. lifting lugs or equal.

5.6 Fragile MATERIALS, oil inflammable and combustible MATERIALS shall be separately packaged in suitable drums, cases, etc., and clearly identified. Storage of such MATERIALS at SITE shall be indoor and under suitable and safe conditions.

5.7 Spare parts shall be packed into separate cases and if not large enough shall be enclosed in another case or crate.

## 5. PACKING SIZES

6.1 Normal dimensions for the packages shall be:

-Height: 2.5 m

-Width: 2.5 m

-Length: 12 m

6.2 Minimum size for a package shall be 2 cubic meters, exceptions can be made for items such as structural beams and large pipes or whenever a minimum package volume of 2 cubic meters is of great inconvenience. Single drums, barrels or individual items shall be combined to meet or exceed these dimensions, or enclosed within larger containers.

6.3 Normal weight limitation for the shipment of packaged or crated MATERIALS and Equipment is 20 tons.

|                                                    |                 |              |
|----------------------------------------------------|-----------------|--------------|
|                                                    |                 |              |
| Date:                                              | Appendix No: 20 | Page 6 of 12 |
| Appendix Title: Packing and Marking and Forwarding |                 |              |

6.4 For the packages larger and heavier than those described here above special arrangements shall be made in advance with EMPLOYER, without prejudice to responsibility of CONTRACTOR for proper performance.

## 6. CONTENT PROTECTION

### 7.1 Against Contact and Impact.

7.1.1 Wherever possible, all Equipment shall be bolted to the case/crate base. Bulk items shall be banded or otherwise unitized, and fastened to the case/crate. Shock absorbing media, such as felt layers, shall be placed between Equipment base and the case/crate, for rotating machinery and large electrical Equipment

7.1.2 Fragile items shall be wrapped in crepe-cellulose wadding or some equally efficient cushioning material such as cast “Styrofoam”, or floated in excelsior.

7.1.3 When several items are packed in the same case/crate, they shall be packed in such a manner as to prevent one from damaging another. Wood spacers shall be used between the parts weighing more than 20 Kg.

7.1.4 As tilting or upending of any case/crate is likely to occur, all contents shall be protected and blocked to avoid damage at such times.

7.1.5 In all cases items shall be nested or packed to reduce volume as much as possible, unless such packing is detrimental to the safety of the MATERIALS. Waste space within any container is a source of weakness and shall be avoided as far as practically possible.

### 8.2 Water and Corrosion Protection.

8.2.1 Items sensitive to vapor or moisture in a case, shall be enclosed in a separate sealing plastic wrapping, made vapor-tight by heat seams. Where penetrations are necessary, such as for the bolts for fastening to the base, the plastic shall be set on the base and the penetration shall be sealed by gaskets around the bolts before the Equipment is set in place.

8.2.2 The plastic shall be of a type and of a thickness which shall limit the penetration by vapor to less than 1 g/m<sup>2</sup>/day at 40° C.

8.2.3 Openings in electric motors, generators and other electrical Equipment shall be sealed with waterproof tape or in some equally efficient manner. A protective

|                                                           |                        |                     |
|-----------------------------------------------------------|------------------------|---------------------|
|                                                           |                        |                     |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 7 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                     |

greaseproof paper shall be inserted between the brushes and armature of motors and generators.

8.2.4 Sharp corners of the contents and protuberances shall be wrapped in felt taped into position, to prevent damage to the plastic.

8.2.5 A bagged desiccant shall be fastened to the contents in each sealed wrapping. If silica gel is used, approx. 2 kg/m<sup>3</sup> of enclosed volume shall be used (this amount might vary based on experience). Some degree of air exhaustion is recommended prior to sealing the plastic.

8.2.6 All parts not protected by the primer shall be coated with a corrosion inhibitive compound suitable for long term storage and easy removal at Site, but not affected by weather, especially when applied on parts in crates or on skids.

8.2.7 For the items not shipped in closed cases, such as vessels, all openings shall be sealed. Flanged openings shall have gaskets and metal plate covers bolted to flanges. Threaded openings shall have a screw cap. Non-flanged openings shall be soundly plugged or plastic-wrap sealed and banded, but this requires coordination with EMPLOYER, which shall in no case relieve CONTRACTOR of its responsibility. Bagged desiccant, as specified above, shall be fastened inside each sealed item.

8.2.8 Pumps, compressors, electrical cabinets and similar items which may be sealed prior to packing shall have bagged desiccant fastened inside the enclosed space in addition to the desiccant for the case packing.

## 9. PACKAGE CONSTRUCTION

### 9.1 Skidded and Framed Boxes.

9.1.1 Skidded and framed boxes shall be constructed upon skid members joined by headers and shall be decked with lumber. Each header shall be double bolted to each skid member. Each bearing surface of the Equipment shall rest over a skid member and the bolts securing the Equipment to the skid shall pass through a skid member. Lag screws are not acceptable for this purpose. 50 mm x 100 mm lumber, as a minimum, shall be used for X-bracing framing on the interior of all box faces except the base. Interior frames shall be provided along the length of the box

|                                                           |                        |                     |
|-----------------------------------------------------------|------------------------|---------------------|
|                                                           |                        |                     |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 8 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                     |

spaced not greater than 1 meter apart.

9.1.2 The skids shall be suitable for fork lift handling.

9.1.3 Box sheathing shall be not less than 20 mm in actual thickness for boxes weighing less than 500 Kg, and not less than 25 mm in actual thickness for boxes less than 1000 kg, and not less than 30 mm in actual thickness for boxes of 1000 kg and over. Floor or deck thickness shall be not less than 50 mm.

9.1.4 Lumber shall be sound and well-seasoned with a moisture content not exceeding 12-18 %. Knots shall be sound and not in excess of 1 / 4 the width of the board. Exterior type plywood may be used, not less than 1 / 2 of the above thickness, provided that all inside edges are fully supported by the framing.

9.1.5 All nails shall be cementing coated or galvanized, wire box nails. For maximum strength, they shall be driven into side grain of lumber used for packaging, with a minimum of 4 nails per board.

9.1.6 Steel strapping shall be applied, whenever considered indispensable, spaced no greater than 600 mm apart, and with not less than two bands per box and the end straps approximately 100 mm from the end of box. Straps shall be a minimum of 82 mm wide, of annealed steel applied with a stretching tool and secured with crimped steel seals. Each strap shall be stapled to every intersected board.

9.1.7 For relatively larger boxes, ventilation holes, about 6 mm in diameter, shall be drilled at intervals slanted upward around the box just under the top bracing, and drainage holes of the same size in the bottom of the box in the locations where the plastic wrapping will not block them.

## 9.2 Open Crates

9.2.1 Crates shall be constructed of nominal lumber sizes and in the same manner as indicated for boxes, except for sheathing. Additional slats shall be provided as necessary for anchoring material, for strength in handling and stacking, and for minimizing pilferage.

9.2.2 A common point of weakness in a crate containing over 300 kg is its top edge, upon which a severe strain is placed by slings each time it is handled. Furthermore, the side wall construction shall be capable of accepting loads of interior blocking when the crate is tipped.

|                                                           |                        |                     |
|-----------------------------------------------------------|------------------------|---------------------|
|                                                           |                        |                     |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 9 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                     |

### 9.3 Pallets

Pallets shall not be accepted.

### 9.4 Steel Drums

When steel drums are used for packing, they shall be non-returnable steel export barrels.

### 9.5 Pipes

Each length of pipes of 150 mm or larger diameter shall be treated as an individual package and shall be marked accordingly.

Pipes smaller than 150 mm but larger than 100 mm in diameter shall be bundled in units not exceeding 2000 kg by strapping cleats of 50 mm x 100 mm lumber or greater above and below the load. Different sizes of pipes shall not be nested without Approval by EMPLOYER, which shall no way diminish CONTRACTOR's responsibility.

### 9.6 Bundles

MATERIALS bundled in packages exceeding 2000 kg shall be fastened with steel rods; frames and plates may be required in certain cases and this shall be coordinated with EMPLOYER or his appointed representative(s), without prejudice to CONTRACTOR's responsibility.

## 10.MARKING

10.1 Identification shall be stenciled on three sides, in letters 50 mm high (if possible), on two opposite sides and on top of the box/crate, in black waterproof and sunroof ink or paint, as follows:

TEL:

FAX:

L/C No.

Shipment No. of

Package No. of

CONTRACTOR's Serial No.

MATERRIAL/Equipment Number and Title:

Item No.

|                                                           |                        |                      |
|-----------------------------------------------------------|------------------------|----------------------|
|                                                           |                        |                      |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 10 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                      |

Net Weight    kg

Gross Weight   kg

Dimensions    mm (H) x        mm (W) x        mm (L)

Maximum permissible weight on top of the package .....kg

10.2 Package number shall identify the individual package.

10.3 Special Markings, such as “FRAGILE HANDLE WITH CARE” “THIS SIDE UP” and “SLING HERE”’, together with their international pictorial symbol shall be used wherever possible. The center of gravity shall be marked with an” X” and the letters “C.G.”

10.4 Cases containing Spare Parts shall be marked on three sides with a horizontal colour paint stripe, 50 mm wide bearing the word” spare parts”, under the EMPLOYER’s name, but not obliterating any printing.

Certain other packages may be required by EMPLOYER to be similarly marked to indicate special handling requirements. These packages shall contain complete markings and colour code even if packed within another box.

10.5 Upon receipt of the export data, a special identification code shall be issued for each package, to be added to the marking. This code shall signify the area for storage and the type of storage required. This area designation code letter shall be stenciled. The letter size shall be 150 mm.

10.6 On two diagonally opposite corners of every package on the three faces forming the corner, a colour triangle shall be painted so that the entire corner is coloured for a distance of 200 mm.

10.7 No advertising or mark to indicate the contents (except for spare parts stripe) shall appear on the package.

10.8 For skids and loose pieces a painted mark identification shall be applied to the ends of each pipe, structural members and similar items.

## 11.PACKING LISTS

11.1 A separate packing list shall be prepared for each package shipped. In addition to the identification as marked on the box, the following data shall be listed for each item in

|                                                           |                        |                      |
|-----------------------------------------------------------|------------------------|----------------------|
|                                                           |                        |                      |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 11 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                      |

the package:

- Description of part or assembly.
- Part number or assembly number.
- Quantity of the part or assembly, or Material.
- Drawing number on which the part, assembly or Material is shown.
- MATERIAL/Equipment Number and Title.

11.2 One copy of the packing list shall be sealed in waterproof envelope and fastened to the lower side of the package face. A thin metal plate shall be fastened to the box completely covering the envelope. A copy of the Bill of Lading will be sent separately by courier mail.

11.3 A second copy of the packing list shall be sealed in a waterproof envelope and fastened to the inside of the box, generally opposite the outside envelope. For crates, the second copies shall be firmly attached to the largest part in the crate where it can be seen but not removed until the crate is opened.

11.4 For skids and loose pieces, only one copy of the above documents shall be sealed in a waterproof envelope and taped to the largest component. A thin metal plate shall be tack welded to the component, completely covering the envelope.

11.5 Three (3) copies of the signed packing lists for each package shall be submitted to EMPLOYER by CONTRACTOR on dispatch of all Equipment and MATERIALS.

## 12.OTHER ENCLOSURES

One complete set of assembly drawings for the mechanical Equipment shall be sealed in a waterproof envelope and enclosed in one of the packages containing the assembly or the part. This is in addition to the other drawing requirements stated elsewhere in the Contract Documents.

## 13.STORAGE PROCEDURE AND INSTRUCTIONS

Prior to commencement of the Procurement phase of the Project, and at any rate, within maximum 5 MONTHS as of EFFECTIVE DATE of the CONTRACT, CONTRACTOR shall prepare and submit its intended Storage Procedure and Instruction designating

|                                                           |                        |                      |
|-----------------------------------------------------------|------------------------|----------------------|
|                                                           |                        |                      |
| <b>Date:</b>                                              | <b>Appendix No: 20</b> | <b>Page 12 of 12</b> |
| <b>Appendix Title: Packing and Marking and Forwarding</b> |                        |                      |

different types and categories of storage for specific types and items of MATERIALS for review and APPROVAL by EMPLOYER. EMPLOYER may from time to time and having regard to the incumbent conditions at SITE, revise this Procedure. CONTRACTOR shall introduce an appropriate SOFTWARE compatible with project's MIV and MRV forms, and get EMPLOYER approval to apply the software for Storage. Meanwhile, APPROVAL and or any comments by EMPLOYER in this respect shall not relieve CONTRACTOR of its responsibility of proper performance under the CONTRACT.