4.1 Manual Handling and Lifting  

(Figures 4.1 - 1&2 refer)

1. Always use mechanical equipment in place of manual handling as far as possible.

2. Carry out a risk assessment on the potential hazards that would be associated with the operations, including health hazards.

3. Assess the manpower required to handle or lift the load safely, and arrange the manpower accordingly.

4. In handling hazardous materials, the workers shall be informed of the hazards and the safety precautions.

5. All relevant persons shall be trained in the proper methods of lifting and carrying.

6. Where team work is required, select the persons whose ages and physical builds are compatible for teaming up. Co-ordinate the actions of the team members by giving necessary instruction/signal. (Figure 4.1 - 2 refers)

7. Always lighten or suitably shape the load for manual handling as far as possible. Keep a lookout for splinters, sharp edges, loose banding, and nails.

8. Clear path of obstruction and tripping hazards.

9. Stack and secure goods safely on trucks, otherwise they fall off and injure passers-by.

10. Always use proper protective equipment such as gloves, safety shoes, etc.

11. Follow the following procedures whenever you lift a load:
   (a) Stand close to the object. Have a firm footing with feet spread on either side of the load;
   (b) Bend the knees and keep your back as straight as you can;
   (c) Grasp object firmly. Be sure grip will not slip;
   (d) Breath-in and throw the shoulders backwards;
(e) Straighten the legs, continuing to keep the back as straight as you can;
(f) Hold object firmly close to the body;
(g) Always lift smoothly. Avoid jerky motions. Turn with feet instead of twisting back.

12. The following table lists a rough guideline on the loads for different sexes and ages that can be taken as safe if they are handled properly. However, when the handling is regular and frequent the loads should be reduced by at least 25%.

<table>
<thead>
<tr>
<th>Sex and Age</th>
<th>Weight of Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
</tr>
<tr>
<td>16 - 18 years of age</td>
<td>20 kg</td>
</tr>
<tr>
<td>20 - 35 years of age</td>
<td>25 kg</td>
</tr>
<tr>
<td>over 50 years of age</td>
<td>16 kg</td>
</tr>
<tr>
<td>Women</td>
<td></td>
</tr>
<tr>
<td>16 - 18 years of age</td>
<td>11 kg</td>
</tr>
<tr>
<td>20 - 35 years of age</td>
<td>15 kg</td>
</tr>
<tr>
<td>over 50 years of age</td>
<td>10 kg</td>
</tr>
</tbody>
</table>

(Source: The Trade Union Congress of United Kingdom.)

Refer to the Guidance Notes on Manual Handling Operations published by the Labour Department.
NOTE:
FOR MAX. LIFTED LOAD -
SEE PARA. 4.1 (12)
MANUAL HANDLING —
CO-ORDINATION OF MOVEMENT

Fig 4.1 - 2
Chapter 4 Safe Use, Handling, Storage and Transport of Materials

4.2 Slings and Slinging

(Figures 4.2 - 1&2 refer)

1. Only use slings which had been tested and marked with a safe working load. Inspect the condition of the slings before use. Ensure that the slings be examined every 6 months by a competent examiner.

2. Never overload a sling. Before lifting, find out the weight of the load and the safe working load of the sling.

3. Use the correct type and length of sling for the job.

4. Pad sharp corners of the load to prevent damage to the sling.

5. Do not use a sling which is damaged or there are broken strands.
   (Figure 4.2-1 refers)

6. Always use suitable guide ropes to prevent spinning or swinging of the load being lifted.

7. Place slings so that the tension is equalled throughout the sling immediately on lifting.

8. Give signals to the crane driver which are definite and clearly understood by all workers engaged in the lifting operation.

9. Never stand under a suspended load, and warn others to keep away.

10. Slings should be coiled or hung up after use and stored away from heat and damp.

11. All scrap slings must be removed from site as soon as possible.

12. Adopt a Colour Coding System for lifting gear,
    eg.:
    Blue for Jan – Feb – Mar
    Yellow for Apr – May – June
    Green for Jul – Aug – Sep
    Orange for Oct – Nov – Dec
<table>
<thead>
<tr>
<th>Red</th>
<th>To be removed from site</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Equipment under quarantine in Main Contractor’s central yard.</td>
</tr>
</tbody>
</table>

The Main Contractor’s safety officer shall be responsible for ensuring that the appropriate colour codes are painted after checking with the updated register.

14. When using bandages as lifting gears, ensure that the safe working load as marked therein are not exceeded. Bandages should be inspected before use on each occasion by a competent person and be examined every 6 months by a competent examiner.
1/20 OF THE WIRES BROKEN IN ANY TEN DIAMETER LENGTH

BIRD CAGE

DEFECTIVE WIRE ROPE SLINGS
CORRECT USE OF WIRE ROPE SLINGS

**Correct Fitting**
- **Dead End**
- **Wire Rope Grips**
- **Thimble**
- **Live End (Load Bearing)**

**Incorrect Fitting**
- Incorrect positioning and use of wire rope slings.

**Safe Handling**
- Use of wire rope slings in corrosive environments.

Fig 4.2 - 2
4.3 Handling of Chemicals and Hazardous Substances

1. Always substitute hazardous chemicals with harmless or less hazardous ones.

2. Enclose the process using chemicals, or provide other engineering controls such as local exhaust ventilation, a fume cupboard or a safety cabinet.

3. Exercise great care in the storage and use of chemicals at all times because they may be explosive, poisonous, corrosive or combustible.

4. Physically separate different chemicals.

5. Store chemicals classified as dangerous goods in a properly constructed and approved dangerous goods store. Keep proper records of all chemicals and hazardous substances delivered, stored, and used on site.

6. Unknown substances and liquids should be regarded as dangerous unless known to be otherwise.

7. All containers should be clearly labelled to indicate contents. Never use a wrongly labelled container for chemicals. (See Figure 2.1.5 - 3)

8. Smoking shall be strictly prohibited when handling dangerous chemicals.

9. Check that you are wearing the correct personal protective equipment (PPE) before you handle chemicals. Refer to the Material Safety Data Sheet for safety precautions to be taken and the use of suitable PPE, such as gloves, rubber boots or respirators. A proper file of Material Safety Data Sheets should be kept on site.

10. When opening containers, hold a rag over the cap or lid as some volatile liquids tend to spurt up when this is released.
11. Wash before you eat and do not eat or smoke at your work location.

12. If the skin is splashed with a chemical, rinse it immediately with plenty of clean water. Eye should be flushed out thoroughly with water follow by immediate medical attention.

13. Eye fountain, emergency shower and breathing apparatus should be available in the vicinity of the workplace.

14. Safety instruction for handling emergency situations should be displayed prominently in the chemical storage and workplace.
4.4 Asbestos

1. You may find asbestos in the following situations:
   (a) as asbestos insulation or coating used for:
       i. thermal insulation of boilers;
       ii. fire protection of structural steelworks;
       iii. thermal and acoustic insulation of buildings;
   (b) as asbestos insulating board used in a wide variety of places such as:
       i. fire protection on doors, protected exits, structural steelworks, etc.;
       ii. cladding on walls, ceilings, etc.;
       iii. internal walls and partitions;
       iv. ceiling tiles in a suspended ceiling;
   (c) as asbestos cement, which is found as:
       i. corrugated sheets (roofing and cladding of buildings);
       ii. flat sheeting for partitioning, cladding and door facings;
       iii. gutters and downpipes.

2. Arrange a Registered Asbestos Consultant to conduct analysis and prepare an asbestos investigation report if you are not sure whether the material and boarding contain asbestos.

3. As soon as asbestos is identified, the concerned area shall be closed off and any work in this area shall only be carried out by approved specialist contractors under continuous supervision by a Registered Asbestos Supervisor.

4. Use working methods that keep asbestos dust levels as low as possible (e.g. use hand tools and avoid breaking boards).

5. Wear suitable protective clothing including respirators when working with asbestos.

6. Provide washing and changing facilities for workers, and arrange to allow the separation of person from protective clothing. The cleaning of protective clothing shall be carried out in a suitable equipped facility located on the premises where work with asbestos is being done or in a suitable equipped laundry.
elsewhere, and if protective clothing is to be removed from the person for cleaning or disposal, it shall be packed in a suitable container and labelled.

7. Do not eat, drink or smoke in area with suspected presence of asbestos dust.

8. Pay attention to the waste collection and disposal to avoid increasing the atmospheric concentration of asbestos fibres. Put the waste in impervious sack and bury it in a controlled tipping site. Asbestos collection and disposal shall only be carried out by approved specialist contractors.

Refer to the Code of Practice for Safety & Health at Work with Asbestos for more details