Manual Handling of Kerbs

A report by the Network Manager to the Highways Advisory Board on 2 November 2004

Introduction

1. The Manual Handling Operations Regulations 1992 (MHOR) require employers to avoid the need to carry out manual handling that creates a risk of injury. This in effect requires the employer to carry out a risk assessment to reduce the risk of injury as far as practicable and to provide information about the weight of loads. Through the Construction (Design and Management) Regulations 1994 (CDM) this requires the client through its designers to also identify these risks to the contractor and eliminate or reduce the risk in any of these works.

2. Since the introduction of MHOR the construction industry has made significant improvements in reducing risks to operatives. However the Health and Safety Executive (HSE) has considered not sufficient advance has been made and in particular work being carried out on kerbing. The majority of kerbs are still laid by physically manual handling the kerb which has resulted in a high level of repetitive injuries or muscular damage. In response the HSE has reassessed what the industry is actually doing to reduce the risks and has been working with contractors, suppliers, and clients to deal with the issue of manual handling of kerbs.

3. The HSE has set a stringent timescale to progressively comply with their recommendations so that all works comply by December 2004. There is a hierarchy of options to be assessed for each site from not using a kerb at all to using mechanical handling, to a smaller lighter kerb unit or as a last resort manual handling in extreme constraint situations.

4. In order to assess the full implications of the HSE recommendations and to determine a countywide approach to kerb laying, a trial was implemented to look at the various methods of kerb laying currently available.

The Kerb Handling Trial

5. Canterbury Highway Unit has been leading a trial on various footway strengthening schemes this year that has been supported by a partnership of Kent County Council, Charcon, Ringway, and Serco. The trial involved replacing the standard 67kg precast concrete (PCC) kerb with a smaller kerb manufactured by Charcon. This kerb is shorter and has a back recess to reduce the weight to a more acceptable 24-kg (a bag of cement weighs 25kg). Other sites involved both mechanical handling and the 24kg kerbs.

6. The following sites have been assessed as part of the trial:

   - Essex Road Canterbury a short (70m) cul-de-sac which was completed using lightweight (24kg) kerbs.
   - Northwood Road Whitstable a residential through road with heavy on street parking which was completed using granite kerbs, traditional PCC kerbs, and lightweight (24kg) PCC kerbs. This site was visited by 26 engineers and technicians from across Kent in order to inspect the issues and plant involved with the kerb handling issue.
   - Kings Road Herne Bay a busy through road with a primary school and residential property. This project uses textured granite aggregate square
profile kerbs. Works are in progress and due for completion in September 2004.
Manual Handling of Kerbs

7. Further trials are still to be carried out to assess the ability to carry out spot repairs to individual kerbs using both lightweight kerbs and mechanical handling equipment. Our term maintenance contractor Ringway Highway Services is currently having mechanical handling devices fitted to its fleet of vehicles. In addition further trials are due to start in South Canterbury Road to assess the problems in laying textured granite aggregate square profile kerbs, granite kerbs, and ragstone kerbs.

8. Rough Common Roundabout is currently nearing completion and entails the use of traditional PCC kerbs. Because of the size of this project the work was put out to tender and mechanical handling was specified for the kerbs and identified in the Health and Safety documentation. The scheme is very similar to one carried out last financial year before the HSE’s initiative on kerb handling and so a comparison gives indicative additional costs of mechanical handling (see paragraph 11). In practical terms it has been difficult to enforce the use of the mechanical handling equipment on site even though the plant required is available. There has been a tendency for the site operatives to revert to traditional methods when not observed by the supervising engineer.

Costs

9. Lightweight kerbs have an additional cost. One lightweight kerb costs the same as a full length heavy PCC kerb so this gives an additional cost of £2.57 per metre which when added to the additional backing concrete results in a total additional cost of £5.00 per metre. Due to the risk of repetitive strain injury such kerbs can only be used for replacement over small lengths.

10. With traditional kerbs the extra cost comes from mechanical handling because a suitable lifting device and operator are needed. Productivity currently is not considered to be as good as the traditional kerb laying techniques.

11. Tender returns in Canterbury (Rough Common roundabout) indicate that kerbing using mechanical handling increases costs by 80 to 100 percent. Approximately 29,800 metres of kerbing were laid countywide during 2003/04 costing approximately £513,800. With mechanical handling the increase in costs would be £430k. This increase would have to be absorbed in current budgets.

12. This estimated increase could be high as it is based on contractors initial reactions to the imposition of the HSE directive and the unknown knowledge or experience of the actual operation and productivity that can be achieved by using mechanical handling plant. For larger scheme work productivity could increase but for smaller maintenance works it will decrease. The likely cost increase for kerbing, therefore, could be in the region of £150k to £200k for 2004/05. We do not have any data from Ringway on the costs incurred for mechanical kerb handling during the trial, however this is being pursued.

HSE’s perspective

13. Back injuries and muscle strain are a significant problem for the construction industry and employers have an obligation to reduce the risk of injury to their workforce. The HSE is seeking to ensure that most kerb laying by traditional manual handling techniques is replaced by either mechanical handling or lighter kerb products. Their intention is not that kerbs will never be laid using manual handling again because they recognise that there are circumstances where a risk assessment could show that manual handling is the best process.
Manual Handling of Kerbs

14. The key to the HSE’s approach is the hierarchy of controls and below is an extract from their enforcement policy document.

   A risk assessment should be undertaken for all heavy kerb laying activity which identifies the appropriate control measures to avoid the risk of injury from manual handling.

   The hierarchy of control will be as follows:

   a. Question the need for heavy kerbs or similar products; then
   b. If such products cannot be eliminated, use measures such as lighter kerb products or mechanical lifting aids to reduce risk to an acceptable level; or
   c. If no mechanical lifting aids are available, produce a timebound action plan outlining the control measures to be used and specify a deadline for implementation within the timescales specified above;

15. It is likely that the HSE will extend the issues from manual handling of kerbs to all handling of heavy construction items within the foreseeable future.

Conclusions

16. From the trial it is concluded that:

   (i) The result of the tightening of the MHOR is that the Council will face additional costs and this will put pressure on current budgets.

   (ii) Productivity with lightweight kerbs is comparable with existing manual handling of heavier kerbs but requires better quality control to achieve the same standard. These kerbs will not be appropriate for all roads.

   (iii) The productivity of mechanical handling is variable depending upon the type of road being constructed and it requires greater working space than currently needed. This could result in more road closures.

   (iv) Mechanical kerb handling equipment has proven reliable and easy to use.

   (v) Risk assessment is critical in choosing the correct solution for each site as even mechanical handling presents its own hazards and risks.

   (vi) A positive proactive approach is expected from the client by the HSE. To show this a risk assessment based, time bound action plan should be prepared for Kent.

Proposed Action Plan

17. Our proposed main actions are:

   (i) All new works are now to specify compliance with manual handling regulations and HSE’s initiative.

   (ii) All maintenance works from December 2004 are to be risk assessed for kerb handling plus other manual handling issues. Mechanical handling to be used where possible otherwise use lightweight kerbs. Only in extreme circumstances and with a detailed method statement plus trained staff should manual handling of heavy kerbs be contemplated.
Manual Handling of Kerbs

(iii) Presentation of the kerb trial and its findings should be made to Kent Highways staff plus a presentation on the action plan and guidance on how to implement it.

(iv) Copy the HSE in on the Kent Highways action plan.

(v) Manual handling compliance should be included in the specification for the new 2006 term contract.

18. Subject to the views of this Board and the Cabinet Member for Environment and Transport it is proposed to adopt the actions in paragraph 17.

Accountable Officer – David Aspinall (01622) 605960

Background Documents – None