IS 13416-3 (1994): Recommendations for preventive measures against hazards at workplaces, Part 3: Disposal of debris [CED 29: Construction Management including safety in Construction]

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IS 13416 (Part 3) : 1994
(Reaffirmed 2003)

भारतीय मानक

कार्यस्थलों पर खतरों के विरुद्ध एहतियाती उपाय — सिफारिशें

भाग 3 मलबे का निपटान

Indian Standard

PREVENTIVE MEASURES AGAINST HAZARDS AT WORKPLACES — RECOMMENDATIONS

PART 3 DISPOSAL OF DEBRIS

UDC 69.059.63 : 658.382.3

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 1994

Price Group 2

FOREWORD

This Indian Standard (Part 3) was adopted by the Bureau of Indian Standards, after the draft finalized by the Safety in Construction Sectional Committee had been approved by the Civil Engineering Division Council.

In most of the construction workplaces not much attention is paid regarding removal and disposal of debris. As a result, many accidents take place. Such accidents are generally not fatal but it is always necessary that all possible precautions should be taken to avoid any accident at workplaces, so that the workers can work in a safe and congenial environment. Simple and proper planning without involving any significant expenditure would help in avoiding such accidents. The Sectional Committee, therefore, felt it necessary to lay down the various operations and precautions necessary for safe disposal of debris. In addition, from fire safety point of view, a reference may be made to IS 13416 (Part 5) : 1994 'Recommendations for preventive measures against hazards at workplaces: Part 5 Fire safety'.

The composition of the technical committee responsible for the formulation of this standard is given in Annex A.

Indian Standard

PREVENTIVE MEASURES AGAINST HAZARDS AT WORKPLACES — RECOMMENDATIONS

PART 3 DISPOSAL OF DEBRIS

1 SCOPE

This standard (Part 3) lays down the classification, and methods of collection and removal of debris (*MULBA*) and preventive measures to be taken during various operations so as to avoid accidents and injuries.

2 REFERENCES

The Indian Standard IS 2925:1984 'Specification for industrial safety helmets (*second revision*)' is a necessary adjunct to this standard.

3 CLASSIFICATION OF DEBRIS

3.1 Various categories of debris may be earth, plaster, mortar waste, bricks, blocks, concrete, glass, steel, wood, wall paper, tiles, slates, stones, pipes of different sizes and varieties, roofing sheets, sanitaryware, etc. These may be fully or partially damaged. After removing salvagable materials of some economic value, the debris may be divided into four categories.

3.1.1 *Glass, Nails, Screws, etc*—which should be removed first and stacked separately so that these do not injure workers or pedestrians. Nails and screws may be extracted or hammered in and blunted before disposal. Loose nails and screws may be removed by the use of magnet.

3.1.2 *Hardcore Debris*—which should be stored and disposed in the designated area/approved sites in consultation with local/statutory authorities. Hardcore debris may also be used for road-work and filling up low lying areas. These shall be stored separately.

3.1.3 *Soft Debris or Rubbish*—which may be burnt at site with proper care under the supervision of a responsible person, without causing nuisance to neighbourhood environment.

3.1.4 *Toxic Chemicals and Other Hazardous Materials*

4 TOOLS FOR REMOVAL OF DEBRIS

The hand tools required for debris removal are spades, pickaxes, shovels, hammers, chisels (for breaking big pieces), pneumatic hammers (for crushing hard debris), mortar pans, baskets, wheel barrows and crowbars.

5 REMOVAL OPERATIONS

The operations for disposal of debris include:

a) *Bringing down through stairs, chutes or by mechanical methods such as hoists, lifts or cranes, etc* — The chutes are generally made of wood or wood covered with GI sheet or steel. Throwing of debris from height shall be avoided.

b) *Dumping at site* — This may be done manually with mortar pans, baskets, gunny bags or wheel barrows, etc, in small works. Mechanical means such as bulldozers, dump trucks, hydraulic rams and cranes may be used on large works and for clearing of roads and by-lanes.

c) *Loading at site* — This may be done manually by head load or with grab bucket excavator or cranes. These may be loaded into wheel barrows, trolleys, tipping wagons, trucks, dumpers wheel loaders or rail wagon, etc, for quick disposal.

d) *Transportation of debris* — This may be done by animals or animal driven carts or mechanical vehicles, such as trucks, dump trucks, trailors, etc.

e) *Unloading and dumping* —This should be done at approved site manually or bulldozers and cranes may be used for unloading and dispersing the debris for filling, etc (*see also* 3.1.2).

6 PRECAUTIONS FOR VARIOUS OPERATIONS

Following special measures and precautions should be adopted during various operations involved in collection and disposal of debris:

a) The area on ground where debris is likely to fall should be barricaded and appropriate warning boards and danger signs displayed.

b) If fine particles exist some water may be sprinkled to prevent dust nuisance in neighbourhood.

c) The debris, where possible, may be filled in the used gunny bags for bringing down or sending through chutes.

d) From safety point of view, carrying of debris on head through stairs should be avoided as far as possible, by adopting mechanical means/scaffolding for conveyance of debris. However, if it is unavoidable, carrying of debris on head may be permitted in case of three floor constructions.

e) While dumping debris temporarily on intermediate floors care should be taken to see the floors are not overloaded. However, dumping of debris on intermediate floors should be avoided as far as possible by clearing the same at regular intervals.

f) Hoist, if available, should be used for bringing down debris.

g) If debris is to be thrown on sides of lanes or roads and open spaces, it should only be thrown in barricaded enclosures so that it does not interfere with traffic, pedestrians or the movement of workers themselves and does not cause nuisance to neighbourhood and environment.

h) The height of dump should be such that its fall may not injure pedestrians or children playing in streets.

j) Glass and steel should be dumped or buried separately to prevent injury.

k) Debris should be removed as soon as possible to the approved dumping ground.

m) Debris should be removed in covered wheel barrows or trucks to prevent nuisance on roads.

n) Workmen should be provided with suitable protective gears for personal safety during works, like safety helmets (IS 2925:1984), boots, hand gloves, goggles, special attire, etc.

p) The work of removal of debris should be carried out during day. In case of poor visibility artificial light may be provided.

q) Debris removing gangs may be engaged after working hours if it is not possible to remove it during working hours as it may interfere with the progress of work.

r) The debris should first be removed from top. Early removal from bottom or sides of dump may cause collapse of debris, causing injuries.

s) Debris of plants, factories, atomic power stations, etc, need special precautions against gases, chemicals and radio-active materials. Their disposal needs special care and equipment for which latest Government regulations shall be followed rigorously.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Safety in Construction Sectional Committee, CED 45

Chairman	*Representing*
MAJ GEN S. N. BOURI	Engineer-in-Chief's Branch, Army Headquarters, New Delhi
Members	
SHRI K. S. S. AJJAN	National Thermal Power Corporation, New Delhi
SHRI A. B. LAL (*Alternate*)	
SHRI G. S. CHANDPURI	Central Water Commission, New Delhi
SHRI D. S. KHANGURA (*Alternate*)	
CHIEF ENGINEER (TRAINING)	Central Public Works Department, New Delhi
SUPERINTENDING ENGINEER (TRAINING) (*Alternate*)	
MAJ DALBIR SINGH	Builders' Association of India, Bombay
SHRI VIKRAM KUMAR (*Alternate*)	
DEPUTY DIRECTOR (B&S)	Ministry of Railways (RDSO), Lucknow
ASSISTANT DESIGN ENGINEER (B&S) (*Alternate*)	
SHRI P. G. DEVADAS	Acrow India Ltd, Bombay
SHRI P. K. DUTTA	Ministry of Surface Transport (Roads Wing), New Delhi
SHRI A. P. BAHADUR (*Alternate*)	
FIRE ADVISER	Ministry of Home Affairs (Fire Services), New Delhi
DEPUTY FIRE ADVISER (*Alternate*)	
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DR A. K. PANDA (*Alternate*)	
DR J. L. JETHWA	Central Mining Research Station, Dhanbad
SHRI M. K. VERMAN (*Alternate*)	
SHRI V. L. KATHANA	Ministry of Labour (DGFASLI), Bombay
SHRI U. B. PARELKAR (*Alternate*)	
SHRI B. B. KUMAR	National Buildings Construction Corporation Ltd, New Delhi
SHRI J. L. MAHAJAN	Geological Survey of India, Calcutta
SHRI V. K. KASLIWAL (*Alternate*)	
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SHRI UMAKANT B. PARELKAR	The Indian Institute of Architects, Bombay
SHRI A. L. CHHATRE (*Alternate*)	
SHRI A. J. PATANKAR	Hindustan Steelworks Construction Ltd, Calcutta
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SHRI AGIA RAM	Central Road Research Institute (CSIR), New Delhi
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DR GOVIND SACHDEV	In personal capacity (*J-1374 Palam Vihar, Dist Gurgaon, Haryana-122017*)
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SHRI S. K. GUHA THAKURTA	National Institute of Construction Management and Research, Bombay
SHRI S. K. GUHA THAKURTA	Gannon Dunkerley & Co Ltd, Bombay
COL T. P. TYAGI	Engineer-in-Chief's Branch, Army Headquarters, New Delhi
SHRI N. K. BHATTACHARYA (*Alternate*)	
SHRI J. VENKATARAMAN, Director (Civ Engg)	Director General, BIS (*Ex-officio Member*)

Member Secretary
SHRI SANJAY PANT
Assistant Director (Civ Engg), BIS

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