

Indian Standard

GENERAL REQUIREMENTS OF POWERED INDUSTRIAL TRUCKS WORKING IN HAZARDOUS AREAS

PART I INTERNAL COMBUSTION ENGINE- POWERED TRUCKS

0. FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 28 April 1978, after the draft finalized by the Industrial Trucks Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 Safety in Industrial operations is of extreme importance in order to avoid loss of human life or equipment and as incentive to the workmen involved in these operations. As more and more industrial trucks are used for load movement in industries with potentially hazardous atmospheres there is a need for guidelines for the economization in risks involved not only in the design and manufacture or conversion of trucks, but also for their operation and maintenance. It is difficult to make all areas absolutely free of hazardous atmosphere but it is possible and may be more economical to devise means to ensure a safe operation for the industrial trucks in hazardous atmospheres.

0.3 Industrial trucks may be powered with an electric battery or internal combustion engine. Therefore this standard is issued in the following two parts:

- a) Part I Internal combustion engine-powered trucks, and
- b) Part II Electric battery powered industrial trucks.

0.4 The areas where the hazardous handling operation occur can be identified with the works and stores dealing with explosives and petroleum based products, motor spirits, plastics, petro-chemicals, paints, cosmetics, LPG, besides oil refineries, airport refilling zones, oil and gas exploration and production rigs, artificial fibre plants, dye works, fertilizer plants, mines and many chemical works.

0.5 The hazard factor in terms of fire and/or explosive risk to the personnel and property depends upon the presence of air/gas, vapour or powder mixture present in critical proportion which, if ignited by hot surface, hot gases, flame or sparks could cause an explosion or conflagration.

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0.6 The question of truck operation in hazardous environment must go farther than the approved designs of the machine. The safety of the total environment must be considered, namely, air circulation, ventilation, layout, types of flooring, presence of ramps and other equipment, etc, as also the question of maintaining the flame-proofed trucks.

0.7 Efforts have been made to ensure provision of the legislation in safety in the operation of industrial trucks in the hazardous areas as applicable to individual industries. No comprehensive guidelines have been in existence.

0.8 Wherever any requirement has been stipulated by statutory order, the same shall prevail over the requirement under this standard.

0.9 In the preparation of this standard, assistance has been derived from the following:

BS CP 1003 : Part I : 1964 Electrical apparatus and associated equipment for use in explosive atmospheres of gas or vapour other than mining applications, Part I Choice, installation and maintenance of flame-proof and intrinsically-safe equipment. British Standards Institution, UK.

ANSI B56.4-1972 Standard for safety industrial trucks, internal combustion engine-powered. Underwriters' Laboratories, USA.

NFPA 505-1975 Fire safety standard for powered industrial trucks, including type designations and areas of use. National Fire Protection Association, USA.

1. SCOPE

1.1 This standard (Part I) covers construction and maintenance requirements of internal combustion engine-powered trucks with regard to their fire hazard aspects. The requirements with regard to other possible hazard aspects of such equipment are not covered in this standard.

1.1.1 This standard applies to forklift trucks, tractors, platform trucks and other specialized industrial trucks powered by internal combustion engines but does not apply to the industrial trucks powered by compressed air or nonflammable gas and farm or road vehicles or automotive vehicles for use on highways.