

	GLOBAL MANUFACTURING STANDARDS SAFETY OF MACHINERY	STANDARD NUMBER: w-KA0
		ISSUE DATE: 20040426
		REV:

PURPOSE: This standard is issued to consolidate the location of adopted external standards within the **Ford K-Standards – Safety of Machinery** category. These standards are to be employed, regardless of country of origin, or use, for mass production and general-purpose machine tools, and facilities equipment to ensure consistent protection of Ford Motor Company employees and facilities. Generally, these requirements are not retroactive to existing equipment, unless specifically called for in the referenced standards. Consistent with the hierarchy of standards described in the European Norms, the following standards are classified as Type A, Type B1 and Type B2.

TYPE A: Type A standards provide basic concepts, principles for design, and general aspects that can be applied to all machinery.

STANDARD NUMBER REPLACED	STANDARD NAME	EXTERNAL STANDARD NO.	EXTERNAL STANDARD NAME
New		ISO 11161	Industrial Automation Systems – Safety of Integrated Manufacturing Systems – Basic Requirements
New		ANSI B11.19	Safeguarding When Referenced by the Other B11 Machine Tool Safety Standards – Performance Criteria for the Design, Construction, Care and Operation (see exceptions noted below)
New		ANSI B11.20	Manufacturing Systems/Cells – Safety Requirements for Construction, Care, and Use
New		NBN EN ISO 12100-1: 1/2/2004 (EN 292 Part 1)	Safety of Machinery – Basic Concepts and General Principles for Design – Part 1: Basic Terminology and Methodology.
New		NBN EN ISO 12100-2: 2003 (EN 292 Part 2)	Safety of Machinery – Basic Concepts and General Principles for Design – Part 2. Technical Principles
New		ISO 13849-1 (EN 954-1)	Safety of Machinery – Safety related parts of control systems – Part 1: General principles for design
New		ISO 14121 (EN 1050)	Safety of Machinery – Principles for risk assessment
New		EN 60204	Safety of Machinery – Electrical equipment of machines – Part 1: General Requirements

EXCEPTIONS: All references to holdout, restraint, or pullback devices noted in ANSI B11.19 shall be ignored, including the definition in 2.26, and the application, design and construction requirements in section 4.2.2. Holdout or restraint devices shall not be used on any machines used in Ford Motor Company.

NOTE: ISO 11161 and ANSI B11.20 contain requirements for integrated manufacturing systems/cells.

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TYPE B1: Type B1 standards are directed towards particular safety aspects (e.g. safety distances, surface temperatures, or noise)

STANDARD NUMBER REPLACED	STANDARD NAME	EXTERNAL STANDARD NO.	EXTERNAL STANDARD NAME
New		ISO 13852 (EN 294)	Safety of Machinery – Safety Distances to Prevent Danger Zones Being Reached By the Upper Limbs
New		ISO 13853 (EN 811)	Safety of Machinery – Safety Distances to Prevent Danger Zones being Reached by the Lower Limbs
New		ISO 13854 (EN 349)	Safety of Machinery – Minimum Gaps to Avoid Crushing of Parts of the Human Body
New		ISO 13855 (EN 999)	Safety of Machinery – Hand/ Arm Speed – Approach Speed of Parts of the Body for Positioning of Safety Devices Safety of Machinery – The positioning of protective equipment in respect of approach speeds of parts of the human body
New		ISO 14118 (EN 1037)	Safety of Machinery – Prevention of unexpected start-up
New		ISO 13850 (EN 418)	Safety of Machinery – Emergency stop-equipment – functional aspects; principles for design
New		EN 981	Safety of Machinery – System of Auditory and Visual Danger and Information Signals
New		EN 982	Safety of Machinery – Safety Requirements for Fluid Power Systems and Their Components - Hydraulics
New		EN 983	Safety of Machinery – Safety Requirements for Fluid Power Systems and Their Components - Pneumatics
New		ISO 10218 (EN 775; ANSI/RIA R15.06; CAN/CSA Z434)	Manipulating Industrial Robots – Safety
New		IEC 62061	Safety Machinery – Functional Safety of Electrical, Electronic, and Programmable Control Systems

Exceptions: References to attended program verification in RIA R15.06, CSA Z434 and in ISO 10218 shall be ignored. Refer to the Corporate Robot Standard FAS08-131 for additional guidance in robots and robotic applications.

NOTE: In ANSI Z535.4 the word "Product" is the term used to describe machinery & equipment.