



# INTERNATIONAL STANDARDS

Applied to a Collider Project

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**INTERNATIONAL STANDARDS ENSURE  
SAFETY, QUALITY, AND GLOBAL  
COMPATIBILITY IN COLLIDER  
PROJECTS, FOSTERING EFFICIENT  
OPERATIONS AND EFFECTIVE  
COLLABORATION.**



# CATEGORIES

# REGULATORY COMPLIANCE

Encompasses ensuring that the project meets the necessary regulatory standards set by international organizations. Those are general standards but focused on engineering



# ISO 50001

Energy Management Systems. This standard outlines requirements for establishing, implementing, maintaining, and improving an energy management system, it includes establishing energy policies, setting energy objectives, conducting energy reviews, and implementing action plans to improve energy performance.

# ISO 27001

Information security management systems. Specifies requirements for establishing, implementing, maintaining, and continually improving an information security management system, it includes risk assessment, risk treatment, controls implementation, and performance evaluation.



# SAFETY AND RISK MANAGEMENT

This category focuses on implementing standards like IEC 61508 for functional safety and ISO 13849 for safety-related parts of control systems

# IEC 61508

Functional safety. Specifies requirements for the functional safety of electrical, electronic, and programmable electronic safety-related systems. It includes risk assessment, safety integrity level (SIL) determination, and safety lifecycle management processes.

# ISO 13849

Safety-related parts of control systems. Specifies requirements for the design and integration of safety-related parts of control systems used in machinery. It includes risk assessment, safety performance level (PL) determination, and validation of safety functions.



# ISO 12100

Safety of Machinery – General Principles for Design  
– Risk Assessment and Risk Reduction: ISO 12100 provides guidance on risk assessment and risk reduction principles for machinery design, it helps organizations identify and mitigate potential hazards associated with machinery, ensuring the safety of personnel and equipment.







# CONSTRUCTION AND ENGINEERING STANDARDS

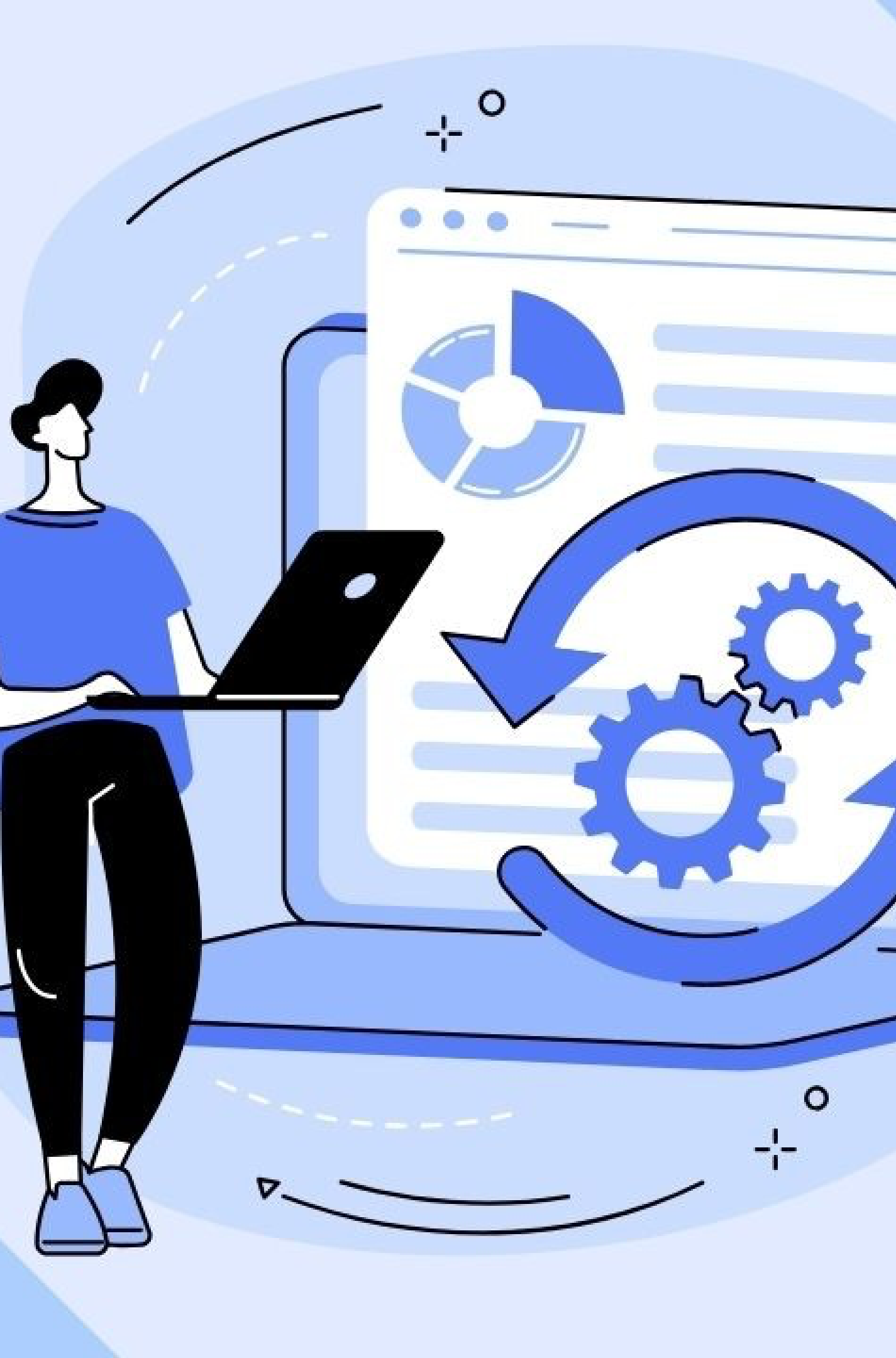
For the successful execution of construction and engineering projects, adherence to standardized processes is essential.



# ISO 19650

Organization and digitization of information about buildings and civil engineering works, including building information modeling (BIM). Specifies requirements for managing information throughout the lifecycle of buildings and civil engineering works, including the application of Building Information Modeling, it includes information requirements, information management processes, and collaborative working practices.





# AUTOMATED SYSTEMS INTEGRATION

Automation plays a crucial role in modern projects, and this category focuses on integrating automation systems seamlessly.



# ISA 101

Human-Machine Interfaces (HMIs) for Process Automation Systems. Provides guidelines for designing effective human-machine interfaces (HMIs) for process automation systems. It includes principles for HMI layout, graphics, navigation, alarm management, and user interaction.

# ISO 12207

Software life cycle processes. Specifies for managing software development life cycle including requirements analysis, design, implementation, testing, deployment, and maintenance. It includes activities such as configuration management, quality assurance, and documentation.

# ISO 15745

Industrial automation systems and integration. provides a framework for integrating industrial automation systems using open standards. It includes guidelines for identifying integration requirements, defining integration architecture, selecting integration technologies, implementing integration solutions, testing integration solutions, deploying integration solutions, and monitoring integration performance.

# ISO 22514

Statistical methods in process management. Provides guidance on statistical methods for assessing and improving process capability and performance. It includes techniques for data collection, analysis, interpretation, and process optimization.



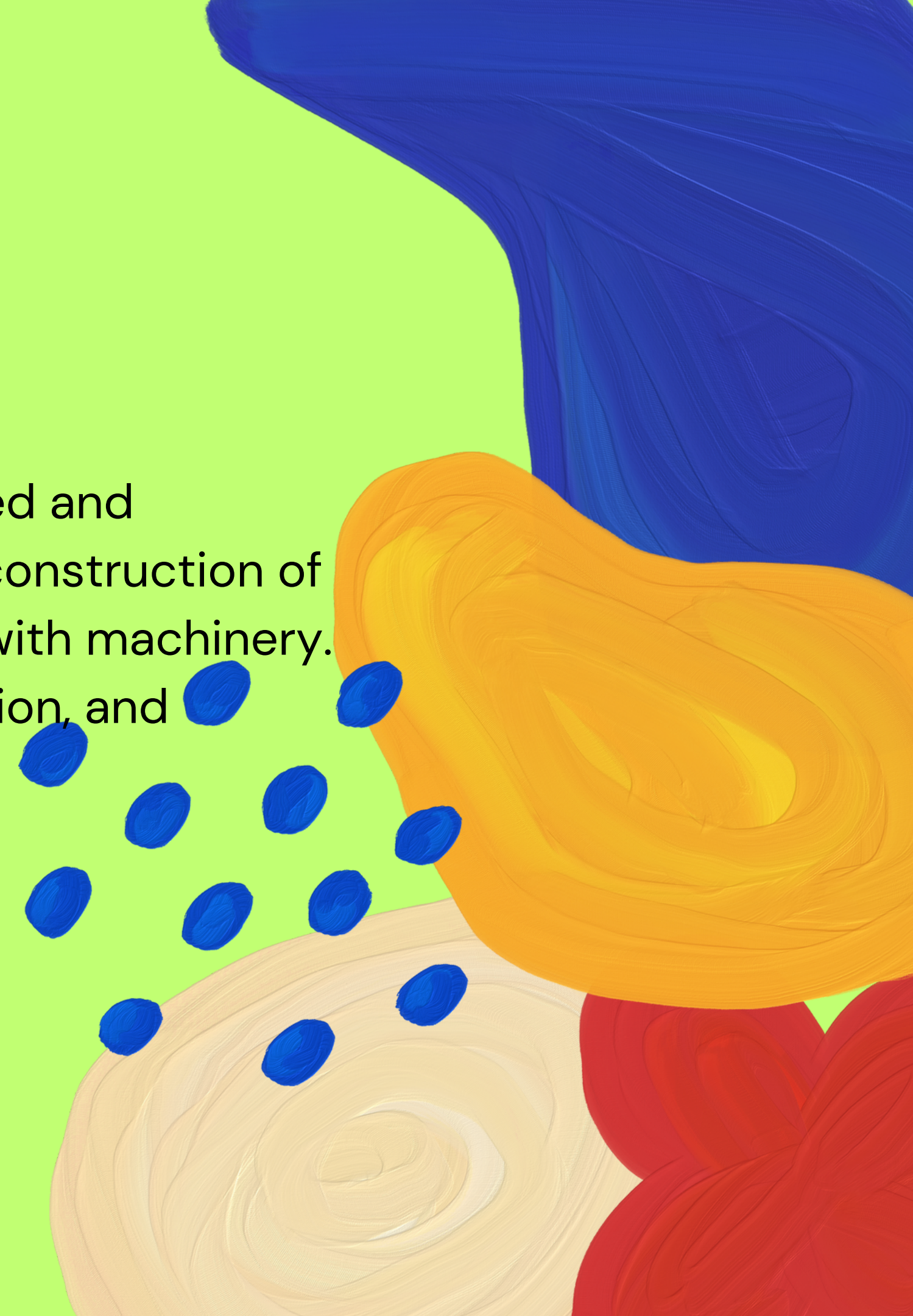
# MACHINERY AND EQUIPMENT REGULATIONS

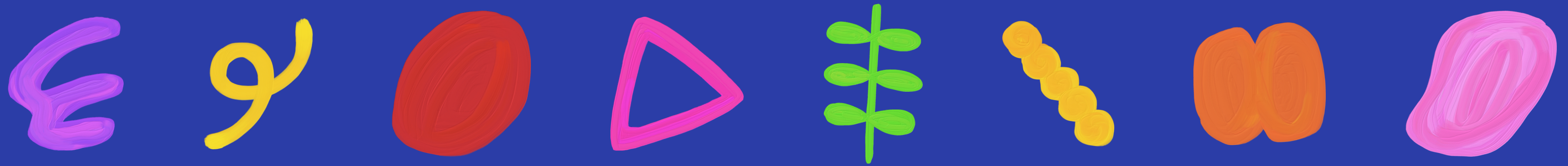
This category addresses the regulations and standards that govern the design and operation of machinery and equipment.



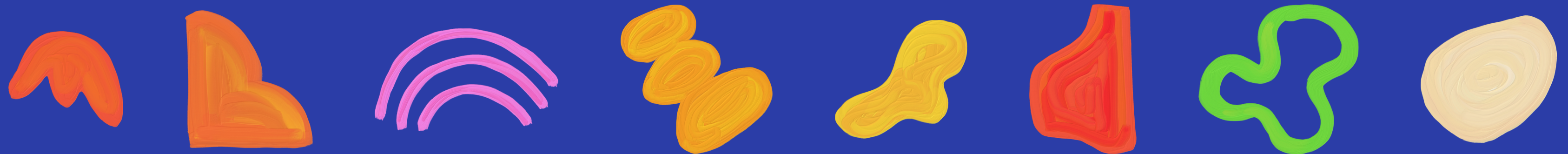
# ISO 14120

General requirements for the design and construction of fixed and movable guards. specifies requirements for the design and construction of guards used to protect personnel from hazards associated with machinery. It includes requirements for guard design, materials, installation, and maintenance.





**IN CONCLUSION, IMPLEMENTING INTERNATIONAL STANDARDS WITHIN A COLLIDER PROJECT OFFERS NUMEROUS BENEFITS THAT CONTRIBUTE TO ITS SUCCESS, EFFICIENCY, AND SAFETY. THESE STANDARDS PROVIDE STRUCTURED FRAMEWORKS AND GUIDELINES FOR VARIOUS ASPECTS OF PROJECT MANAGEMENT, ENGINEERING, SAFETY, AND INFORMATION MANAGEMENT.**







# THANKS:)

In the report you can check the general and specific outlines, including the requirements and justifications of each one of the norms