

METEXKIT

STEEL BUILDING SPECIFICATIONS GUIDE

钢结构规范指南

A practical reference for structural members, steel grades, secondary framing, connections, corrosion protection and building envelope systems.

用于了解钢结构构件、钢材等级、次结构、连接件、防腐及建筑围护系统的实用技术参考资料。

FOR PROJECT PLANNING & PROCUREMENT
项目规划与采购参考

One-Stop Steel Building Solutions
一站式钢结构建筑解决方案

metexkit.com

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Important: This guide is a procurement and project-planning reference. Final member sizes, steel grades, connection details and design loads must be confirmed by qualified engineers and the applicable project standards.

重要：本指南用于项目规划和采购沟通。最终构件尺寸、钢材等级、连接节点及设计荷载，必须由专业工程师依据项目适用规范最终确认。

01 Primary Structural System

主结构体系

The primary structural system carries the principal building loads and transfers them to the foundations. The specification should identify the structural arrangement, member type, material grade and connection concept.

Item	What to Specify / 规格要点
Columns / 钢柱	Specify section, steel grade, thickness, base-plate arrangement and connection to the foundation.
Rafters / Beams / 屋面梁、钢梁	Specify span, section, steel grade, camber if required, and connection details.
Base Plates / 柱脚底板	Specify plate thickness, dimensions, stiffeners, holes and anchor-bolt arrangement.
Connection Plates / 连接板	Identify plate grade, thickness, hole pattern and welding requirements.
Design Loads / 设计荷载	Include applicable dead, live, wind, snow, seismic, crane or equipment loads as required.

Specification principle / 规格原则

Do not select a primary member only by nominal size or weight. The member must satisfy the structural design, loading, serviceability and applicable code requirements.

不要只根据“看起来多大”或“每吨多少钱”选择主结构构件。构件必须满足结构设计、荷载、使用性能及项目适用规范。

02 Secondary Framing

次结构

Secondary framing supports roof and wall cladding and transfers those loads to the primary frame. Cold-formed C and Z sections are common, but the final section depends on design.

Item	What to Specify / 规格要点
Purlins / 檩条	Roof-support members. Specify C/Z section, thickness, coating, spacing and span.
Girts / 墙梁	Wall-support members. Specify section, thickness, spacing and connection method.
Eave Struts / 檐口构件	Coordinate roof and wall geometry and provide continuity at the eaves.
Bridging / 拉条	Provide restraint to purlins/girts where required by design.
Coating / 防腐	Specify galvanized coating or paint system according to environmental exposure.

Purlin and girt spacing should be coordinated with the selected roof/wall panels and the design loads.

檩条、墙梁间距应与屋面/墙面板规格及设计荷载协调确定。

03 Steel Grades & Material Requirements

钢材等级与材料要求

Steel grades should be specified by the project design and the applicable standard. ASTM, EN, GB and JIS are different standards systems; a grade should not be treated as an automatic equivalent of another standard.

Item	What to Specify / 规格要点
Standard / 标准	State the applicable standard clearly, such as ASTM, EN, GB or JIS.
Grade / 等级	State the exact grade required by the design or procurement specification.
Thickness / 厚度	Identify required thickness or thickness range for each member.
Mill Certificate / 材质证明	Request appropriate material documentation when required by the project.
Traceability / 可追溯性	Define batch, heat number or documentation requirements when necessary.

Typical specification wording / 典型规格表达

Example	Meaning
Primary frame: project-specified structural steel	主结构：按项目设计指定结构钢材
Secondary framing: cold-formed C/Z sections	次结构：冷弯 C/Z 型钢
Material certificates: as required by project	材质证明：按项目要求提供

04 Connections & Anchor Bolts

连接件与地脚螺栓

Connections determine how individual members work together. Procurement documents should clearly distinguish structural bolts, ordinary fasteners and foundation anchor bolts.

Item	What to Specify / 规格要点
High-Strength Bolts / 高强螺栓	Specify standard, grade/class, diameter, length and connection requirements.
Nuts & Washers / 螺母与垫片	Match the bolt system and applicable standard.
Anchor Bolts / 地脚螺栓	Specify diameter, grade, length, embedment, projection and layout.
Welded Connections / 焊接节点	Specify welding requirements according to the approved design and fabrication procedure.
Holes / 螺栓孔	Hole size, location and tolerances should follow approved drawings and standards.

For anchor bolts, location accuracy is especially important because errors can affect steel-frame erection on site.

地脚螺栓的位置精度尤其重要，因为偏差可能直接影响钢柱现场安装。

05 Bracing & Stability

支撑与结构稳定

Bracing systems help the building resist lateral actions and maintain structural stability. The exact arrangement depends on building geometry and engineering design.

Item	What to Specify / 规格要点
Roof Bracing / 屋面支撑	Provides stability in the roof plane.
Wall Bracing / 墙面支撑	Provides longitudinal or lateral stability.
Cross Bracing / 交叉支撑	Common arrangement using rods, angles or other members.
Flange Bracing / 翼缘支撑	May be required to restrain primary members.
Portal Action / 门式刚架作用	Rigid frame behavior may provide part of the building's lateral resistance.

Do not remove or relocate bracing without engineering review.

未经工程审核，不应随意取消、移动或改变支撑构件。

06 Roof & Wall Systems

屋面与墙面系统

The building envelope combines cladding, insulation, flashings, fasteners, sealants and rainwater components. The correct system depends on climate, building use, appearance and performance requirements.

Item	What to Specify / 规格要点
Roof Panels / 屋面板	Profile, thickness, coating, color, effective width and fixing method.
Wall Panels / 墙面板	Profile or sandwich panel type, thickness, coating and fixing method.
Insulation / 保温	Material, thickness, density/performance and fire requirements where applicable.
Flashings / 泛水收边	Ridge, eave, gable, corner, base and opening flashings.
Fasteners / 紧固件	Type, length, coating, washer and sealing requirements.
Rainwater / 雨水系统	Gutters, downpipes, outlets and related flashings.

Roof and wall systems should be specified together with purlin/girt spacing and the expected environmental exposure.

屋面、墙面系统应与檩条/墙梁间距及项目环境条件一起确定。

07 Corrosion Protection

防腐与表面处理

Corrosion protection should be selected according to exposure, required service life, maintenance strategy and component accessibility.

Item	What to Specify / 规格要点
Paint System / 涂装体系	May include surface preparation, primer, intermediate coat and topcoat.
Coating Thickness / 涂层厚度	Specify the required system and measurement method where applicable.
Environment / 环境	Consider inland, humid, coastal, agricultural and industrial exposure.
Maintenance / 维护	Consider access, inspection frequency and expected maintenance needs.

08 Hot-Dip Galvanizing

热镀锌

Hot-Dip Galvanizing (HDG) immerses fabricated steel components in molten zinc to form a protective zinc coating. It can be a strong option for suitable components and environments, particularly where long-term corrosion protection and reduced maintenance are important.

热镀锌是将经过加工的钢构件浸入熔融锌液中，在钢材表面形成保护性锌层。对于合适的构件和环境，尤其是在重视长期防腐和降低维护需求的项目中，可以作为重要方案。

Galvanizing should be considered during design because vent/drain holes, component dimensions, fabrication sequence and handling can affect the process.

热镀锌应在设计阶段提前考虑，因为排气/排液孔、构件尺寸、加工顺序及吊装处理都会影响镀锌工艺。

09 Procurement Specification Schedule

采购规格表

The following template can be used as a starting point for an RFQ or material schedule. Replace the placeholders with project-specific requirements.

下面的表格可以作为项目询价或材料清单的起点。实际采购时，应将占位内容替换为项目具体要求。

Category	Specification to Confirm	项目确认内容
Primary frame	Section / grade / thickness / connection	截面 / 钢材等级 / 厚度 / 连接
Purlins & girts	C/Z section / thickness / spacing / coating	C/Z 型 / 厚度 / 间距 / 防腐
Bracing	Type / size / location	类型 / 尺寸 / 位置
Bolts	Standard / class / diameter / length	标准 / 等级 / 直径 / 长度
Anchor bolts	Diameter / length / embedment / layout	直径 / 长度 / 埋深 / 布置
Roof panels	Profile / thickness / coating / color	板型 / 厚度 / 涂层 / 颜色
Wall panels	Profile / thickness / coating / color	板型 / 厚度 / 涂层 / 颜色
Insulation	Material / thickness / performance	材料 / 厚度 / 性能
Flashings	Type / thickness / coating / color	类型 / 厚度 / 涂层 / 颜色
Rainwater	Gutters / downpipes / outlets	天沟 / 落水管 / 排水口
Doors & windows	Type / size / quantity / performance	类型 / 尺寸 / 数量 / 性能
Surface treatment	Paint / HDG / duplex / requirement	涂装 / 热镀锌 / 复合 / 要求

10 Quotation Checklist

询价检查清单

A clear RFQ reduces unnecessary back-and-forth and helps the supplier understand what should be priced.

清晰的项目询价可以减少反复沟通，并帮助供应商准确判断需要报价的内容。

Check	Information	中文
	Project location	国家 / 地区 / 项目所在地
	Building use	仓库 / 厂房 / 农业 / 畜牧 / 其他
	Overall dimensions	长度 / 宽度 / 高度 / 跨度 / 柱距
	Roof & wall	板型 / 厚度 / 颜色 / 保温
	Structural requirements	荷载 / 抗风 / 雪荷载 / 抗震 / 行车
	Surface treatment	涂装 / 热镀锌 / 复合防腐
	Doors & windows	类型 / 尺寸 / 数量
	Rainwater	天沟 / 落水管 / 排水
	Drawings	建筑图 / 结构图 / 基础图 / 节点图
	Files	PDF / DWG / DXF / Excel / other
	Standards	项目适用标准或客户指定标准
	Delivery	目的港 / 交货地点 / 计划时间

Reminder / 提示

If some information is not confirmed, leave it open and explain what is known. A preliminary RFQ can start with the available information.

如果部分信息尚未确定，可以先留空并说明已知条件。项目询价可以从目前已有资料开始。

Need a Steel Building Solution?

需要钢结构建筑解决方案吗？

Provide the project information currently available. METEXKIT can use the initial information to understand the building, materials, surface treatment and related procurement requirements.

您可以先提供目前已有的项目资料。METEXKIT 可以根据初步信息了解建筑、材料、表面处理以及相关采购需求。

REQUEST A QUOTE
项目询价

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