SSPC Protective Coating Specialist (PCS) Exam Information

CORROSION AND CORROSION CONTROL

Mechanisms of metal corrosion; common types of corrosion; methods of corrosion control.

COATING TYPES AND THEIR MECHANISMS OF PROTECTION

Mechanisms of corrosion control by coatings; desired film properties; coating components and their functions; mechanisms of coating film formation; comparison of generic coating types; selection of coating systems.

SURFACE PREPARATION FOR PAINTING

Preparing surfaces before cleaning; surface contaminants causing early coating deterioration; surface preparation methods; recommended removal methods for different contaminants; standards for cleaned steel surfaces; visual aids to surface cleanliness; level of cleanliness required for different coatings; air abrasive blasting equipment; centrifugal blasting equipment; surface profile and blasting abrasives; and blast cleaning procedures.

APPLICATION OF COATINGS

Brush, roller, and spray application; application of coatings that cure by fusion; handling of paints; application temperatures and humidities; achieving desired film thickness; recommended spraying procedures; coating application defects.

COATINGS FOR INDUSTRIAL STEEL STRUCTURES

Selecting surface preparation for steel; coating systems appropriate for steel; selection of coating systems by environmental zone; coatings for atmospheric zones; coatings for immersion and marine service; coatings for buried steel; coatings for high-temperature surfaces.

COATING OF CONCRETE SURFACES

Components of concrete; similar features of all cementitious surfaces; placement of concrete; reasons for coating concrete; pre-coating materials applied to cementitious surfaces; coatings for cementitious surfaces; surface preparation for coating; inspection of coating application.

INSPECTION AND QUALITY CONTROL

The specification and its contents; responsibilities of the inspector; monitoring the ambient conditions; pre-surface preparation inspection; post-surface preparation inspection; pre-painting inspection; inspection of paint application.

MANAGEMENT OF COATINGS PROJECTS

The corporate coatings program; planning for programmed painting; contracting for coatings work; specifying and testing coating materials; project roles and responsibilities; quality assurance: formal systems; quality control and coating inspection.

STANDARDS AND SPECIFICATIONS FOR COATINGS PROJECTS

Engineering standards for protective coatings; specifications for coatings systems; preparing a coatings specification.

ACHIEVING ECONOMIC PROTECTION BY COATINGS

Corrosion and its prevention; selection of construction materials; alternate construction materials; coatings and linings; economic considerations in coatings system selection.

NEW CONSTRUCTION AND PLANNED MAINTENANCE PAINTING

Coordinating and scheduling new construction projects; coating systems selection; shop and field painting; maintenance painting; facility condition survey and analysis; selecting coating systems for maintenance; implementation of the maintenance plan.

CONTRACTS AND DOCUMENTATION FOR COATINGS PROJECTS

Contractor qualification; competitive bidding; project management and inspection.

COATING FAILURES

Causes of coating failures; consequences of coating failure; investigating the cause of failure; laboratory analysis of coating failures; responsibility for failure and repairs.

REGULATIONS AND SAFETY FOR COATINGS PROJECTS

Environmental regulations affecting the coatings industry; regulating hazardous materials; worker safety and health; OSHA general and construction industry standards; specifying and complying with regulation; hazard communication; hazards from toxic materials and operations; surface preparation hazards and safety requirements; paint application hazards and safety requirements; hazards in high, confined, and remote places; personal protective equipment; other safety issues.