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07 56 00  Fluid-Applied Roofing
07 57 00  Coated Foamed Roofing
  07 57 13  Sprayed Polyurethane Foam Roofing
07 58 00  Roll Roofing
07 60 00  Flashing and Sheet Metal
07 61 00  Sheet Metal Roofing
  07 61 13  Standing Seam Sheet Metal Roofing
  07 61 16  Batten Seam Sheet Metal Roofing
  07 61 19  Flat Seam Sheet Metal Roofing
07 62 00  Sheet Metal Flashing and Trim
07 63 00  Sheet Metal Roofing Specialties
07 64 00  Sheet Metal Wall Cladding
  07 64 13  Standing Seam Sheet Metal Wall Cladding
  07 64 16  Batten Seam Sheet Metal Wall Cladding
  07 64 19  Flat Seam Sheet Metal Wall Cladding
07 65 00  Flexible Flashing
  07 65 13  Laminated Sheet Flashing
  07 65 16  Modified Bituminous Sheet Flashing
  07 65 19  Plastic Sheet Flashing
  07 65 23  Rubber Sheet Flashing
  07 65 26  Self-Adhering Sheet Flashing
07 70 00  Roof and Wall Specialties and Accessories
07 71 00  Roof Specialties
  07 71 13  Manufactured Copings
  07 71 16  Manufactured Counterflash Systems
  07 71 19  Manufactured Gravel Stops and Fasciae
  07 71 23  Manufactured Gutters and Downspouts
  07 71 23.13  Gutter Debris Guards
  07 71 26  Reglets
  07 71 29  Manufactured Roof Expansion Joints
  07 71 33  Manufactured Scuppers
07 72 00  Roof Accessories
  07 72 13  Manufactured Curbs
  07 72 23  Relief Vents
  07 72 26  Ridge Vents
  07 72 33  Roof Hatches
  07 72 36  Smoke Vents
  07 72 39  Operable Roof Vents
  07 72 43  Roof Walk Boards
  07 72 46  Roof Walkways
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  07 72 63  Waste Containment Assemblies
  07 72 73  Vegetated Roof Systems
07 76 00  Roof Pavers
07 76 13  Roof Ballast Pavers
07 76 16  Roof Decking Pavers
07 77 00  Wall Specialties
07 80 00  Fire and Smoke Protection
07 81 00  Applied Fireproofing
  07 81 13  Cement Aggregate Fireproofing
  07 81 16  Cementitious Fireproofing
  07 81 19  Foamed Magnesium-Oxychloride Fireproofing
  07 81 23  Intumescent Fireproofing
  07 81 26  Magnesium Cement Fireproofing
  07 81 29  Mineral-Fiber Cementitious Fireproofing
  07 81 33  Mineral-Fiber Fireproofing
07 82 00  Board Fireproofing
  07 82 13  Calcium-Silicate Board Fireproofing
  07 82 16  Slag-Fiber Board Fireproofing
07 84 00  Firestopping
  07 84 13  Penetration Firestopping
  07 84 13.13 Penetration Firestopping Mortars
  07 84 13.16 Penetration Firestopping Devices
  07 84 43  Joint Firestopping
  07 84 53  Building Perimeter Firestopping
07 86 00  Smoke Seals
07 87 00  Smoke Containment Barriers
07 90 00  Joint Protection
07 91 00  Preformed Joint Seals
  07 91 13  Compression Seals
  07 91 16  Joint Gaskets
  07 91 23  Backer Rods
  07 91 26  Joint Fillers
07 92 00  Joint Sealants
  07 92 13  Elastomeric Joint Sealants
  07 92 16  Rigid Joint Sealants
  07 92 19  Acoustical Joint Sealants
07 95 00  Expansion Control
  07 95 13  Expansion Joint Cover Assemblies
  07 95 13.13 Interior Expansion Joint Cover Assemblies
  07 95 13.16 Exterior Expansion Joint Cover Assemblies
  07 95 13.19 Parking Deck Expansion Joint Cover Assemblies
  07 95 53  Joint Slide Bearings
  07 95 63  Bridge Expansion Joint Cover Assemblies
08 00 00  Openings
08 01 00  Operation and Maintenance of Openings
  08 01 10  Operation and Maintenance of Doors and Frames
  08 01 11  Operation and Maintenance of Metal Doors and Frames
  08 01 14  Operation and Maintenance of Wood Doors
  08 01 15  Operation and Maintenance of Plastic Doors
08 01 16  Operation and Maintenance of Composite Doors
08 01 17  Operation and Maintenance of Integrated Door Opening Assemblies
08 01 30  Operation and Maintenance of Specialty Doors and Frames
08 01 32  Operation and Maintenance of Sliding Glass Doors
08 01 33  Operation and Maintenance of Coiling Doors and Grilles
08 01 34  Operation and Maintenance of Special Function Doors
08 01 35  Operation and Maintenance of Folding Doors and Grilles
08 01 36  Operation and Maintenance of Panel Doors
08 01 39  Operation and Maintenance of Traffic Doors
08 01 40  Operation and Maintenance of Entrances, Storefronts, and Curtain Walls
08 01 41  Operation and Maintenance of Entrances
08 01 42  Operation and Maintenance of Storefronts
08 01 44  Operation and Maintenance of Curtain Walls
08 01 50  Operation and Maintenance of Windows
08 01 51  Operation and Maintenance of Metal Windows
08 01 52  Operation and Maintenance of Wood Windows
08 01 52.61 Wood Window Repairs
08 01 52.71 Wood Window Rehabilitation
08 01 52.81 Wood Window Replacement
08 01 52.91 Wood Window Restoration
08 01 52.93 Historic Treatment of Wood Windows
08 01 53  Operation and Maintenance of Plastic Windows
08 01 54  Operation and Maintenance of Composite Windows
08 01 56  Operation and Maintenance of Special Function Windows
08 01 60  Operation and Maintenance of Skylights and Roof Windows
08 01 61  Operation and Maintenance of Roof Windows
08 01 62  Operation and Maintenance of Unit Skylights
08 01 63  Operation and Maintenance of Metal-Framed Skylights
08 01 64  Operation and Maintenance of Plastic-Framed Skylights
08 01 70  Operation and Maintenance of Hardware
08 01 71  Operation and Maintenance of Door Hardware
08 01 74  Operation and Maintenance of Access Control Hardware
08 01 75  Operation and Maintenance of Window Hardware
08 01 80  Maintenance of Glazing
08 01 81  Maintenance of Glass Glazing
08 01 84  Maintenance of Plastic Glazing
08 01 88  Maintenance of Special Function Glazing
08 01 90  Operation and Maintenance of Louvers and Vents
08 01 91  Operation and Maintenance of Louvers
08 01 92  Operation and Maintenance of Louvered Equipment Enclosures
08 01 95  Operation and Maintenance of Vents

08 03 00  Conservation Treatment for Period Openings
08 03 11  Conservation Treatment for Period Metal Doors and Frames
08 03 11.23 Conservation Treatment for Period Bronze Doors and Frames
08 03 14  Conservation Treatment for Period Wood Doors
08 03 14.23 Conservation Treatment for Period Metal-Faced Wood Doors
08 03 14.33 Conservation Treatment for Period Stile and Rail Wood Doors
08 03 30  Conservation Treatment for Period Specialty Doors and Frames
08 03 34  Conservation Treatment for Period Special Function Doors
08 03 34.59 Conservation Treatment for Period Vault Doors
08 03 50  Conservation Treatment for Period Windows
08 03 51  Conservation Treatment for Period Metal Windows
08 03 51.16 Conservation Treatment for Period Bronze Windows
08 03 51.23 Conservation Treatment for Period Steel Windows
08 03 52  Conservation Treatment for Period Wood Windows
08 03 70  Conservation Treatment for Period Hardware
08 03 71  Conservation Treatment for Period Door Hardware
08 03 75  Conservation Treatment for Period Window Hardware
08 03 90  Conservation Treatment for Period Louvers and Vents
08 03 91  Conservation Treatment for Period Louvers
08 03 95  Conservation Treatment for Period Vents

08 05 00  Common Work Results for Openings
08 05 05  Selective Demolition for Openings

08 06 00  Schedules for Openings
08 06 10  Door Schedule
08 06 10.13 Door Type Schedule
08 06 10.16 Frame Type Schedule
08 06 40  Schedules for Entrances, Storefronts, and Curtain Walls
08 06 41  Entrance Schedule
08 06 42  Storefront Schedule
08 06 50  Window Schedule
08 06 60  Skylight Schedule
08 06 70  Hardware Schedule
08 06 71  Door Hardware Schedule
08 06 80  Glazing Schedule
08 06 90  Louver and Vent Schedule

08 08 00  Commissioning of Openings

08 10 00  Doors and Frames

08 11 00  Metal Doors and Frames
08 11 13  Hollow Metal Doors and Frames
08 11 13.13 Standard Hollow Metal Doors and Frames
08 11 13.16 Custom Hollow Metal Doors and Frames
08 11 16  Aluminum Doors and Frames
08 11 19  Stainless-Steel Doors and Frames
08 11 23  Bronze Doors and Frames
08 11 63  Metal Screen and Storm Doors and Frames
08 11 63.13 Steel Screen and Storm Doors and Frames
08 11 63.23 Aluminum Screen and Storm Doors and Frames
08 11 66  Metal Screen Doors and Frames
08 11 66.13 Steel Screen Doors and Frames
08 11 66.23 Aluminum Screen Doors and Frames
08 11 69  Metal Storm Doors and Frames
08 11 69.13 Steel Storm Doors and Frames
08 11 69.23 Aluminum Storm Doors and Frames
08 11 73  Sliding Metal Fire Doors
08 11 74  Sliding Metal Grilles

08 12 00  Metal Frames
08 12 13  Hollow Metal Frames
08 12 13.13 Standard Hollow Metal Frames
08 12 13.53 Custom Hollow Metal Frames
08 12 16  Aluminum Frames
08 12 19  Stainless-Steel Frames
08 12 23  Bronze Frames

08 13 00  Metal Doors
08 13 13  Hollow Metal Doors
08 13 13.13  Standard Hollow Metal Doors
08 13 13.53  Custom Hollow Metal Doors
08 13 16  Aluminum Doors
08 13 16.13  Aluminum Terrace Doors
08 13 19  Stainless-Steel Doors
08 13 23  Bronze Doors
08 13 73  Sliding Metal Doors
08 13 76  Bifolding Metal Doors

08 14 00  Wood Doors
08 14 13  Carved Wood Doors
08 14 16  Flush Wood Doors
08 14 23  Clad Wood Doors
08 14 23.13  Metal-Faced Wood Doors
08 14 23.16  Plastic-Laminate-Faced Wood Doors
08 14 23.17  Plastic-Faced Wood Doors
08 14 23.19  Molded-Hardboard-Faced Wood Doors
08 14 29  Prefinished Wood Doors
08 14 33  Stile and Rail Wood Doors
08 14 33.13  Wood Terrace Doors
08 14 66  Wood Screen Doors
08 14 69  Wood Storm Doors
08 14 73  Sliding Wood Doors
08 14 76  Bifolding Wood Doors

08 15 00  Plastic Doors
08 15 13  Laminated Plastic Doors
08 15 16  Solid Plastic Doors
08 15 66  Plastic Screen Doors
08 15 69  Plastic Storm Doors
08 15 73  Sliding Plastic Doors
08 15 76  Bifolding Plastic Doors

08 16 00  Composite Doors
08 16 13  Fiberglass Doors
08 16 73  Sliding Composite Doors
08 16 76  Bifolding Composite Doors

08 17 00  Integrated Door Opening Assemblies
08 17 13  Integrated Metal Door Opening Assemblies
08 17 23  Integrated Wood Door Opening Assemblies
08 17 33  Integrated Plastic Door Opening Assemblies
08 17 43  Integrated Composite Door Opening Assemblies

08 30 00  Specialty Doors and Frames

08 31 00  Access Doors and Panels
08 31 13  Access Doors and Frames
08 31 13.53  Security Access Doors and Frames
08 31 16  Access Panels and Frames

08 32 00  Sliding Glass Doors
08 32 13  Sliding Aluminum-Framed Glass Doors
08 32 16  Sliding Plastic-Framed Glass Doors
08 32 19  Sliding Wood-Framed Glass Doors

08 33 00  Coiling Doors and Grilles
08 33 13  Coiling Counter Doors
08 33 16  Coiling Counter Grilles
08 33 23  Overhead Coiling Doors
08 33 23.13 Overhead Rapid Coiling Doors
08 33 26  Overhead Coiling Grilles
08 33 33  Side Coiling Doors
08 33 36  Side Coiling Grilles
08 33 43  Overhead Coiling Smoke Curtains
08 33 44  Overhead Coiling Fire Curtains

08 34 00  Special Function Doors
08 34 13  Cold Storage Doors
08 34 16  Hangar Doors
08 34 19  Industrial Doors
08 34 33  Lightproof Doors
08 34 36  Darkroom Doors
08 34 46  Radio-Frequency-Interference Shielding Doors
08 34 49  Radiation Shielding Doors and Frames
08 34 49.13 Neutron Shielding Doors and Frames
08 34 53  Security Doors and Frames
08 34 56  Security Gates
08 34 58  File Room Doors and Frames
08 34 59  Vault Doors and Day Gates
08 34 73  Sound Control Door Assemblies
08 34 73.13 Metal Sound Control Door Assemblies
08 34 73.16 Wood Sound Control Door Assemblies

08 35 00  Folding Doors and Grilles
08 35 13  Folding Doors
08 35 13.13 Accordion Folding Doors
08 35 13.23 Accordion Folding Fire Doors
08 35 13.33 Panel Folding Doors
08 35 16  Folding Grilles
08 35 16.13 Accordion Folding Grilles

08 36 00  Panel Doors
08 36 13  Sectional Doors
08 36 16  Single-Panel Doors
08 36 19  Multi-Leaf Vertical Lift Doors
08 36 23  Telescoping Vertical Lift Doors

08 38 00  Traffic Doors
08 38 13  Flexible Strip Doors
08 38 16  Flexible Traffic Doors
08 38 19  Rigid Traffic Doors

08 39 00  Pressure-Resistant Doors
08 39 13  Airtight Doors
08 39 19  Watertight Doors
08 39 53  Blast-Resistant Doors
08 40 00  Entrances, Storefronts, and Curtain Walls

08 41 00  Entrances and Storefronts
  08 41 13  Aluminum-Framed Entrances and Storefronts
  08 41 13.13  Fire-Rated Aluminum-Framed Entrances and Storefronts
  08 41 16  Bronze-Framed Entrances and Storefronts
  08 41 19  Stainless-Steel-Framed Entrances and Storefronts
  08 41 23  Steel-Framed Entrances and Storefronts
  08 41 26  All-Glass Entrances and Storefronts
  08 41 26.13  Point Supported All-Glass Storefronts

08 42 00  Entrances
  08 42 13  Aluminum-Framed Entrances
  08 42 26  All-Glass Entrances
  08 42 29  Automatic Entrances
  08 42 29.13  Folding Automatic Entrances
  08 42 29.23  Sliding Automatic Entrances
  08 42 29.33  Swinging Automatic Entrances
  08 42 33  Revolving Door Entrances
  08 42 33.13  Security Revolving Door Entrances
  08 42 36  Balanced Door Entrances
  08 42 39  Pressure-Resistant Entrances
  08 42 43  Intensive Care Unit/Critical Care Unit Entrances

08 43 00  Storefronts
  08 43 11  Timber-Framed Storefronts
  08 43 13  Aluminum-Framed Storefronts
  08 43 13.13  Fire-Rated Aluminum Storefronts
  08 43 16  Bronze-Framed Storefronts
  08 43 19  Stainless-Steel-Framed Storefronts
  08 43 23  Steel-Framed Storefronts
  08 43 26  All-Glass Storefronts
  08 43 27  Channel Glass Storefronts
  08 43 29  Sliding Storefronts

08 44 00  Curtain Wall and Glazed Assemblies
  08 44 11  Glazed Timber Curtain Walls
  08 44 12  Glazed Composite Curtain Wall
  08 44 12.13  Glazed Fiberglass Curtain Wall
  08 44 13  Glazed Aluminum Curtain Walls
  08 44 16  Glazed Bronze Curtain Walls
  08 44 18  Glazed Steel Curtain Walls
  08 44 19  Glazed Stainless-Steel Curtain Walls
  08 44 23  Structural Sealant Glazed Curtain Walls
  08 44 26  Structural Glass Curtain Walls
  08 44 26.13  Glass Framed Point Supported Glass Curtain Walls
  08 44 26.16  Metal Framed Point Supported Glass Curtain Walls
  08 44 26.23  Cable Framed Point Supported Glass Curtain Walls
  08 44 33  Sloped Glazing Assemblies

08 45 00  Translucent Wall and Roof Assemblies
  08 45 13  Structured-Polycarbonate-Panel Assemblies
  08 45 23  Fiberglass-Sandwich-Panel Assemblies

08 46 00  Window Wall Assemblies
08 50 00  Windows
08 51 00  Metal Windows
  08 51 13  Aluminum Windows
  08 51 16  Bronze Windows
  08 51 19  Stainless-Steel Windows
  08 51 23  Steel Windows
  08 51 23.13  Hot-Rolled Steel Windows
  08 51 23.23  Cold-Rolled Steel Windows
  08 51 66  Metal Window Screens
  08 51 69  Metal Storm Windows
08 52 00  Wood Windows
  08 52 13  Metal-Clad Wood Windows
  08 52 16  Plastic-Clad Wood Windows
  08 52 66  Wood Window Screens
  08 52 69  Wood Storm Windows
08 53 00  Plastic Windows
  08 53 13  Vinyl Windows
  08 53 66  Vinyl Window Screens
  08 53 69  Vinyl Storm Windows
08 54 00  Composite Windows
  08 54 13  Fiberglass Windows
  08 54 66  Fiberglass Window Screens
  08 54 69  Fiberglass Storm Windows
08 55 00  Pressure-Resistant Windows
  08 55 13  Tornado-Resistant Windows
  08 55 23  Blast-Resistant Windows
08 56 00  Special Function Windows
  08 56 19  Pass Windows
  08 56 46  Radio-Frequency-Interference Shielding Windows
  08 56 49  Radiation Shielding Windows
  08 56 53  Security Windows
  08 56 56  Security Window Screens
  08 56 59  Service and Teller Window Units
  08 56 73  Sound Control Windows
  08 56 88  Interior Insulating Windows
08 60 00  Roof Windows and Skylights
08 61 00  Roof Windows
  08 61 13  Metal Roof Windows
  08 61 16  Wood Roof Windows
08 62 00  Unit Skylights
  08 62 13  Domed Unit Skylights
  08 62 16  Pyramidal Unit Skylights
  08 62 19  Vaulted Unit Skylights
  08 62 23  Tubular Skylights
08 63 00  Metal-Framed Skylights
  08 63 13  Domed Metal-Framed Skylights
  08 63 16  Pyramidal Metal-Framed Skylights
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08 91 00  Louvers
  08 91 13  Motorized Wall Louvers
  08 91 16  Operable Wall Louvers
  08 91 19  Fixed Louvers
  08 91 26  Door Louvers
08 92 00  Louvered Equipment Enclosures
08 95 00  Vents
  08 95 13  Soffit Vents
  08 95 16  Wall Vents
  08 95 33  Explosion Vents
  08 95 43  Flood Vents

09 00 00  Finishes
09 01 00  Maintenance of Finishes
  09 01 20  Maintenance of Plaster and Gypsum Board
  09 01 20.91  Plaster Restoration
  09 01 30  Maintenance of Tiling
  09 01 30.91  Tile Restoration
  09 01 50  Maintenance of Ceilings
  09 01 50.91  Ceiling Restoration
  09 01 60  Maintenance of Flooring
  09 01 60.91  Flooring Restoration
  09 01 70  Maintenance of Wall Finishes
  09 01 70.91  Wall Finish Restoration
  09 01 80  Maintenance of Acoustic Treatment
  09 01 90  Maintenance of Painting and Coating
  09 01 90.51  Paint Cleaning
  09 01 90.52  Maintenance Repainting
  09 01 90.53  Maintenance Coatings
  09 01 90.61  Repainting
  09 01 90.91  Paint Restoration
  09 01 90.92  Coating Restoration
  09 01 90.93  Paint Preservation

09 03 00  Conservation Treatment of Period Finishes
  09 03 21  Conservation Treatment for Period Plaster Assemblies
  09 03 25  Conservation Treatment for Period Plastering
  09 03 25.23  Conservation Treatment for Period Lime-Based Plaster
  09 03 30  Conservation Treatment for Period Tile
  09 03 50  Conservation Treatment for Period Ceilings
  09 03 51  Conservation Treatment for Period Suspended Ceilings
  09 03 56  Conservation Treatment for Textured Ceilings
  09 03 56.16  Conservation Treatment for Period Metal-Panel Textured Ceilings
  09 03 60  Conservation Treatment for Period Flooring
  09 03 63  Conservation Treatment for Period Masonry Flooring
  09 03 63.13  Conservation Treatment for Period Brick Flooring
  09 03 63.40  Conservation Treatment for Period Stone Flooring
  09 03 64  Conservation Treatment for Period Wood Flooring
  09 03 64.29  Conservation Treatment for Period Wood Strip and Plank Flooring
  09 03 65  Conservation Treatment for Period Resilient Flooring
  09 03 65.16  Conservation Treatment for Period Resilient Sheet Flooring
09 03 66 Conservation Treatment for Period Terrazzo Flooring
09 03 70 Conservation Treatment for Period Wall Finishes
09 03 72 Conservation Treatment for Period Wall Coverings
09 03 90 Conservation Treatment for Period Painting and Coating
09 03 91 Conservation Treatment for Period Painted Surfaces
09 03 91.13 Conservation Treatment for Period Exterior Painting
09 03 91.23 Conservation Treatment for Period Interior Painting

09 05 00 **Common Work Results for Finishes**
09 05 05 Selective Demolition for Finishes
09 05 13 Common Finishes
09 05 61 Common Work Results for Flooring Preparation
09 05 61.13 Moisture Vapor Emission Control
09 05 71 Acoustic Underlayment

09 06 00 **Schedules for Finishes**
09 06 00.13 Room Finish Schedule
09 06 20 Schedules for Plaster and Gypsum Board
09 06 30 Schedules for Tiling
09 06 50 Schedules for Ceilings
09 06 60 Schedules for Flooring
09 06 70 Schedules for Wall Finishes
09 06 80 Schedules for Acoustical Treatment
09 06 90 Schedules for Painting and Coating
09 06 90.13 Paint Schedule

09 08 00 **Commissioning of Finishes**

09 20 00 **Plaster and Gypsum Board**
09 21 00 **Plaster and Gypsum Board Assemblies**
09 21 13 Plaster Assemblies
09 21 16 Gypsum Board Assemblies
09 21 16.23 Gypsum Board Shaft Wall Assemblies
09 21 16.33 Gypsum Board Area Separation Wall Assemblies

09 22 00 **Supports for Plaster and Gypsum Board**
09 22 13 Metal Furring
09 22 13.13 Metal Channel Furring
09 22 13.23 Resilient Channel Furring
09 22 16 Non-Structural Metal Framing
09 22 16.13 Non-Structural Metal Stud Framing
09 22 26 Suspension Systems
09 22 26.23 Metal Suspension Systems
09 22 26.33 Plastic Suspension Systems
09 22 36 Lath
09 22 36.13 Gypsum Lath
09 22 36.23 Metal Lath
09 22 39 Veneer Plaster Base

09 23 00 **Gypsum Plastering**
09 23 13 Acoustical Gypsum Plastering
09 23 82 Fireproof Gypsum Plastering

09 24 00 **Cement Plastering**
09 24 13 Adobe Finish
09 24 23 Cement Stucco
09 24 33 Cement Parging

09 25 00 Other Plastering
  09 25 13 Acrylic Plastering
  09 25 13.13 Acrylic Plaster Finish
  09 25 23 Lime Based Plastering
  09 25 26 Natural Clay Plastering

09 26 00 Veneer Plastering
  09 26 13 Gypsum Veneer Plastering

09 27 00 Plaster Fabrications
  09 27 13 Glass-Fiber-Reinforced Gypsum Fabrications
  09 27 23 Simulated Plaster Fabrications

09 28 00 Backing Boards and Underlayments
  09 28 13 Cementitious Backing Boards
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10 10 00 Information Specialties

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10 11 13 Chalkboards
10 11 13.13 Fixed Chalkboards
10 11 13.23 Modular-Support-Mounted Chalkboards
10 11 13.33 Rail-Mounted Chalkboards
10 11 13.43 Portable Chalkboards
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10 11 16.43 Portable Markerboards
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10 11 23.13 Fixed Tackboards
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10 11 23.43 Portable Tackboards
10 11 33 Sliding Visual Display Units
10 11 33.13 Horizontal-Sliding Visual Display Units
10 11 33.23 Vertical-Sliding Visual Display Units
10 11 36 Visual Display Conference Units
10 11 39 Visual Display Rails
10 11 43 Visual Display Wall Panels
10 11 46 Visual Display Fabrics

10 12 00 Display Cases

10 13 00 Directories
10 13 13 Electronic Directories
10 13 23 Illuminated Directories

10 14 00 Signage
10 14 16 Plaques
10 14 19 Dimensional Letter Signage
10 14 23 Panel Signage
10 14 23.13 Engraved Panel Signage
10 14 26 Post and Panel/Pylon Signage
10 14 33 Illuminated Panel Signage
10 14 43 Photoluminescent Signage
10 14 53 Traffic Signage
10 14 53.13 Transportation Reference Markers
10 14 63 Electronic Message Signage
10 14 64 Audible Signage
10 14 66  Floating Signage
10 14 67  Tactile Signage

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10 17 13  Telephone Directory Units
10 17 16  Telephone Enclosures
10 17 16.13  Telephone Stalls
10 17 16.16  Telephone Alcoves
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10 18 00  Informational Kiosks

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10 21 00  Compartments and Cubicles
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10 21 13.13  Metal Toilet Compartments
10 21 13.14  Stainless-Steel Toilet Compartments
10 21 13.16  Plastic-Laminate-Clad Toilet Compartments
10 21 13.17  Phenolic-Core Toilet Compartments
10 21 13.19  Plastic Toilet Compartments
10 21 13.23  Particleboard Toilet Compartments
10 21 13.40  Stone Toilet Compartments
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10 22 14  Expanded Metal Partitions
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10 22 19  Demountable Partitions
10 22 19.13  Demountable Metal Partitions
10 22 19.23  Demountable Wood Partitions
10 22 19.33  Demountable Plastic Partitions
10 22 19.43  Demountable Composite Partitions
10 22 19.53  Demountable Gypsum Partitions
10 22 23  Portable Partitions, Screens, and Panels
10 22 23.13  Wall Screens
10 22 23.23  Movable Panel Systems
10 22 33  Accordion Folding Partitions
10 22 36  Coiling Partitions
10 22 39  Folding Panel Partitions
10 22 39.13  Folding Glass-Panel Partitions
10 22 43  Sliding Partitions

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10 25 13  Patient Bed Service Walls
10 25 16 Modular Service Walls

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10 26 13 Corner Guards
10 26 16 Bumper Guards
10 26 16.13 Bumper Rails
10 26 16.16 Protective Corridor Handrails
10 26 23 Protective Wall Covering
10 26 23.13 Impact Resistant Wall Protection
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10 28 16.13 Residential Bath Accessories
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10 28 19.16 Shower Doors
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10 74 43  Below-Grade Egress Assemblies
10 74 46  Window Wells

10 75 00  Flagpoles
10 75 13  Automatic Flagpoles
10 75 16  Ground-Set Flagpoles
10 75 19  Nautical Flagpoles
10 75 23  Wall-Mounted Flagpoles
10 75 26  Roof-Mounted Flagpoles
10 75 29  Plaza-Mounted Flagpoles

10 80 00  Other Specialties
10 81 00  Pest Control Devices
10 81 13  Bird Control Devices
10 81 16  Insect Control Devices
10 81 19  Rodent Control Devices

10 82 00  Grilles and Screens
10 82 13  Exterior Grilles and Screens
10 82 19  Exterior Sound Screens
10 82 23  Interior Grilles and Screens

10 83 00  Flags and Banners
10 83 13  Flags
10 83 16  Banners

10 84 00  Gas Lighting
10 84 13  Exterior Gas Lighting
10 84 16  Interior Gas Lighting

10 86 00  Security Mirrors and Domes

10 88 00  Scales

11 00 00  Equipment
11 01 00  Operation and Maintenance of Equipment
11 01 10  Operation and Maintenance of Vehicle and Pedestrian Equipment
11 01 20  Operation and Maintenance of Commercial Equipment
11 01 30  Operation and Maintenance of Residential Equipment
11 01 40  Operation and Maintenance of Foodservice Equipment
11 01 50  Operation and Maintenance of Educational and Scientific Equipment
11 01 56  Operation and Maintenance of Observatory Equipment
11 01 60  Operation and Maintenance of Entertainment and Recreation Equipment
11 01 70  Operation and Maintenance of Healthcare Equipment
11 01 80  Operation and Maintenance of Facility Maintenance and Operation Equipment
11 01 90  Operation and Maintenance of Other Equipment

11 05 00  Common Work Results for Equipment
11 05 05  Selective Demolition for Equipment
11 05 13  Common Motor Requirements for Equipment

11 06 00  Schedules for Equipment
11 06 10  Schedules for Vehicle and Pedestrian Equipment
11 06 20  Schedules for Commercial Equipment
11 06 30  Schedules for Residential Equipment
11 06 40  Schedules for Foodservice Equipment
11 06 40.13 Foodservice Equipment Schedule
11 06 50  Schedules for Educational and Scientific Equipment
11 06 60  Schedules for Entertainment and Recreation Equipment
11 06 70  Schedules for Healthcare Equipment
11 06 70.13 Healthcare Equipment Schedule
11 06 80  Schedules for Facility Maintenance and Operation Equipment
11 06 90  Schedules for Other Equipment
11 06 90.11 Schedules for Detention Equipment

11 08 00  Commissioning of Equipment

11 10 00  Vehicle and Pedestrian Equipment

11 11 00  Vehicle Service Equipment
11 11 13  Compressed-Air Vehicle Service Equipment
11 11 19  Vehicle Lubrication Equipment
11 11 23  Tire-Changing Equipment
11 11 26  Vehicle-Washing Equipment
11 11 36  Vehicle Charging Equipment
11 11 36.13 Commercial Electric Vehicle Charging Unit
11 11 36.16 Residential Electric Vehicle Charging Unit

11 12 00  Parking Control Equipment
11 12 13  Parking Key and Card Control Units
11 12 16  Parking Ticket Dispensers
11 12 23  Parking Meters
11 12 26  Parking Fee Collection Equipment
11 12 26.13 Parking Fee Coin Collection Equipment
11 12 33  Parking Gates
11 12 33.13 Lift Arm Parking Gates
11 12 33.16 Sliding Parking Gates
11 12 33.19 Swinging Parking Gates

11 13 00  Loading Dock Equipment
11 13 13  Loading Dock Bumpers
11 13 16  Loading Dock Seals and Shelters
11 13 16.13 Loading Dock Seals
11 13 16.23 Loading Dock Shelters
11 13 16.33 Loading Dock Rail Shelters
11 13 19  Stationary Loading Dock Equipment
11 13 19.13 Loading Dock Levelers
11 13 19.23 Stationary Loading Dock Lifts
11 13 19.26 Loading Dock Truck Lifts
11 13 19.33 Loading Dock Truck Restraints
11 13 23  Portable Dock Equipment
11 13 23.13 Portable Dock Lifts
11 13 23.16 Portable Dock Ramps
11 13 23.19 Portable Dock Bridges
11 13 23.23 Portable Dock Platforms
11 13 26  Loading Dock Lights
11 14 00  Pedestrian Control Equipment
   11 14 13  Pedestrian Gates
   11 14 13.16  Rotary Gates
   11 14 13.19  Turnstiles
   11 14 16  Pedestrian Control Devices
   11 14 19  Portable Posts and Railings
   11 14 26  Pedestrian Fare Collection Equipment
   11 14 26.13  Pedestrian Coin Fare Collection Equipment
   11 14 43  Pedestrian Detection Equipment
   11 14 43.13  Electronic Detection and Counting Systems
   11 14 53  Pedestrian Security Equipment

11 15 00  Security Control Equipment

11 20 00  Commercial Equipment

11 21 00  Retail and Service Equipment
   11 21 13  Cash Registers and Checking Equipment
   11 21 23  Vending Equipment
   11 21 23.13  Merchandise Vending Machines
   11 21 23.16  Reverse Vending Machines
   11 21 23.19  Video Rental Vending Machines
   11 21 23.36  Token Vending Machines
   11 21 24  Money Changing Machines
   11 21 33  Checkroom Equipment
   11 21 43  Weighing and Wrapping Equipment
   11 21 53  Barber and Beauty Shop Equipment
   11 21 63  Refrigerated Display Equipment
   11 21 73  Commercial Laundry and Dry Cleaning Equipment
   11 21 73.13  Dry Cleaning Equipment
   11 21 73.16  Drying and Conditioning Equipment
   11 21 73.19  Finishing Equipment
   11 21 73.23  Commercial Ironing Equipment
   11 21 73.26  Commercial Washers and Extractors
   11 21 73.33  Coin-Operated Laundry Equipment
   11 21 73.43  Hanging Garment Conveyors
   11 21 83  Photo Processing Equipment

11 22 00  Banking Equipment
   11 22 13  Vault Equipment
   11 22 13.13  Safe Deposit Boxes
   11 22 13.16  Safes
   11 22 13.23  Vault Ventilators
   11 22 13.26  Time Capsules
   11 22 16  Teller and Service Equipment
   11 22 16.13  Teller Equipment Systems
   11 22 16.16  Automatic Banking Systems
   11 22 16.19  Money Handling Equipment
   11 22 16.23  Money Depositories
   11 22 16.26  Money Cart Pass-Through
   11 22 16.29  Package Transfer Units
   11 22 16.33  Deal Trays

11 25 00  Hospitality Equipment
   11 25 13  Registration Equipment

11 28 00  Office Equipment
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## Audio-Visual Equipment

- **11 52 00**  
  - 11 52 13  
    - Fixed Projection Screens  
  - 11 52 13.13  
    - Portable Projection Screens  
  - 11 52 13.19  
    - Rear Projection Screens  
  - 11 52 16  
    - Projectors  
  - 11 52 16.13  
    - Movie Projectors  
  - 11 52 16.16  
    - Slide Projectors  
  - 11 52 16.19  
    - Overhead Projectors  
  - 11 52 16.23  
    - Opaque Projectors  
  - 11 52 16.26  
    - Video Projectors  
  - 11 52 19  
    - Players and Recorders  
  - 11 52 23  
    - Audio-Visual Equipment Supports

## Laboratory Equipment

- **11 53 00**  
  - 11 53 13  
    - Laboratory Fume Hoods  
  - 11 53 13.13  
    - Recirculating Laboratory Fume Hoods  
  - 11 53 16  
    - Laboratory Incubators  
  - 11 53 17  
    - Laboratory Equipment Washers  
  - 11 53 19  
    - Laboratory Sterilizers  
  - 11 53 23  
    - Laboratory Refrigerators  
  - 11 53 26  
    - Laboratory Freezers  
  - 11 53 29  
    - Laboratory Controlled-Environment Cabinets  
  - 11 53 33  
    - Emergency Safety Appliances  
  - 11 53 43  
    - Service Fittings and Accessories  
  - 11 53 53  
    - Biological Safety Cabinets

## Planetarium Equipment

- **11 55 00**  
  - 11 55 13  
    - Planetarium Projectors  
  - 11 55 16  
    - Planetarium Pendulums

## Observatory Equipment

- **11 56 00**  
  - 11 56 13  
    - Telescopes  
  - 11 56 16  
    - Telescope Mounts  
  - 11 56 19  
    - Telescope Drive Mechanisms  
  - 11 56 23  
    - Telescope Domes

## Vocational Shop Equipment

- **11 57 00**

## Exhibit Equipment

- **11 59 00**

## Entertainment and Recreation Equipment

- **11 60 00**  
  - 11 61 00  
    - Acoustical Shells  
  - 11 61 23  
    - Folding and Portable Stages  
  - 11 61 33  
    - Rigging Systems and Controls  
  - 11 61 33.11  
    - Lighting Rigging Systems  
  - 11 61 33.16  
    - Scenery Rigging Systems  
  - 11 61 33.19  
    - Curtain Systems  
  - 11 61 43  
    - Stage Curtains

## Musical Equipment

- **11 62 00**  
  - 11 62 13  
    - Bells  
  - 11 62 16  
    - Carillons  
  - 11 62 19  
    - Organs

## Athletic Equipment

- **11 66 00**
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11 79 00  Therapy Equipment

11 80 00  Facility Maintenance and Operation Equipment

11 81 00  Facility Maintenance Equipment
  11 81 13  Floor and Wall Cleaning Equipment
  11 81 16  Housekeeping Carts
  11 81 19  Vacuum Cleaning Systems
  11 81 23  Façade Access Equipment
  11 81 23.13 Window Washing Systems
  11 81 29  Facility Fall Protection

11 82 00  Facility Solid Waste Handling Equipment
  11 82 13  Solid Waste Bins
  11 82 19  Packaged Incinerators
  11 82 23  Recycling Equipment
  11 82 26  Facility Waste Compactors
  11 82 29  Composting Equipment
  11 82 33  Facility Waste Shredders
  11 82 36  Facility Waste Balers

11 90 00  Other Equipment

11 91 00  Religious Equipment
  11 91 13  Baptisteries

11 92 00  Agricultural Equipment
  11 92 13  Milkers
  11 92 16  Stock Feeders
  11 92 19  Stock Waterers
  11 92 23  Agricultural Waste Clean-Up Equipment

11 93 00  Horticultural Equipment
  11 93 13  Hydroponic Growing Systems
  11 93 16  Seeders
  11 93 19  Transplanters
  11 93 23  Potting Machines
  11 93 26  Flat Fillers
  11 93 29  Baggers
  11 93 33  Soil Mixers

11 94 00  Veterinary Equipment

11 95 00  Arts and Crafts Equipment
  11 95 13  Kilns

11 97 00  Security Equipment
  11 97 13  Deal Drawers
  11 97 16  Gun Ports
  11 97 23  Valuable Material Storage

11 98 00  Detention Equipment
  11 98 11  Detention Equipment General Requirements
  11 98 12  Detention Doors and Frames
  11 98 13  Detention Pass-Through Doors
  11 98 14  Detention Door Hardware
11 98 16 Detention Equipment Fasteners
11 98 19 Detention Room Padding
11 98 21 Detention Windows
11 98 23 Detention Window Screens

12 00 00 Furnishings
12 01 00 Operation and Maintenance of Furnishings
  12 01 10 Operation and Maintenance of Art
  12 01 20 Operation and Maintenance of Window Treatments
  12 01 30 Operation and Maintenance of Casework
  12 01 40 Operation and Maintenance of Furnishings and Accessories
  12 01 50 Operation and Maintenance of Furniture
  12 01 60 Operation and Maintenance of Multiple Seating
  12 01 90 Operation and Maintenance of Other Furnishings

12 05 00 Common Work Results for Furnishings
  12 05 05 Selective Demolition for Furnishings
  12 05 13 Fabrics

12 06 00 Schedules for Furnishings
  12 06 10 Schedules for Art
  12 06 20 Schedules for Window Treatments
  12 06 20.13 Window Treatment Schedule
  12 06 30 Schedules for Casework
  12 06 30.13 Manufactured Casework Schedule
  12 06 40 Schedules for Furnishings and Accessories
  12 06 40.13 Furnishings Schedule
  12 06 50 Schedules for Furniture
  12 06 60 Schedules for Multiple Seating
  12 06 90 Schedules for Other Furnishings

12 08 00 Commissioning of Furnishings

12 10 00 Art
12 11 00 Murals
  12 11 13 Photo Murals
  12 11 16 Sculptured Brick Panels
  12 11 23 Brick Murals
  12 11 26 Ceramic Tile Murals
  12 11 33 Trompe l'oeil

12 12 00 Wall Decorations
  12 12 13 Commissioned Paintings
  12 12 16 Framed Paintings
  12 12 19 Framed Prints
  12 12 23 Tapestries
  12 12 26 Wall Hangings

12 14 00 Sculptures
  12 14 13 Carved Sculpture
  12 14 16 Cast Sculpture
  12 14 19 Constructed Sculpture
  12 14 23 Relief Art

12 17 00 Art Glass

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  14 01 10 Operation and Maintenance of Dumbwaiters
  14 01 10.71 Dumbwaiter Rehabilitation
  14 01 20 Operation and Maintenance of Elevators
  14 01 20.71 Elevator Rehabilitation
  14 01 30 Operation and Maintenance of Escalators and Moving Walks
  14 01 30.71 Escalators and Moving Walks Rehabilitation
  14 01 40 Operation and Maintenance of Lifts
  14 01 40.71 Lift Rehabilitation
  14 01 70 Operation and Maintenance of Turntables
  14 01 80 Operation and Maintenance of Scaffolding
  14 01 90 Operation and Maintenance of Other Conveying Equipment

14 05 00 Common Work Results for Conveying Equipment
  14 05 05 Selective Demolition for Conveying Equipment

14 06 00 Schedules for Conveying Equipment
  14 06 10 Schedules for Dumbwaiters
  14 06 20 Schedules for Elevators
  14 06 20.13 Elevator Equipment Schedule
  14 06 30 Schedules for Escalators and Moving Walks
  14 06 40 Schedules for Lifts
  14 06 40.13 Lift Schedule
  14 06 70 Schedules for Turntables
  14 06 80 Schedules for Scaffolding
  14 06 90 Schedules for Other Conveying Equipment

14 08 00 Commissioning of Conveying Equipment
  14 08 10 Commissioning of Dumbwaiters
  14 08 20 Commissioning of Elevators
  14 08 30 Commissioning of Escalators and Moving Walks
  14 08 40 Commissioning of Lifts
  14 08 70 Commissioning of Turntables
  14 08 80 Commissioning of Scaffolding
14 10 00  Dumbwaiters
14 11 00  Manual Dumbwaiters
14 12 00  Electric Dumbwaiters
14 14 00  Hydraulic Dumbwaiters
14 20 00  Elevators
14 21 00  Electric Traction Elevators
   14 21 13 Electric Traction Freight Elevators
   14 21 23 Electric Traction Passenger Elevators
   14 21 23.13 Machine Room Electric Traction Passenger Elevators
   14 21 23.16 Machine Room-Less Electric Traction Passenger Elevators
   14 21 33 Electric Traction Residential Elevators
   14 21 43 Electric Traction Service Elevators
14 24 00  Hydraulic Elevators
   14 24 13 Hydraulic Freight Elevators
   14 24 23 Hydraulic Passenger Elevators
   14 24 33 Hydraulic Residential Elevators
   14 24 43 Hydraulic Service Elevators
14 26 00  Limited-Use/Limited-Application Elevators
14 27 00  Custom Elevator Cabs and Doors
   14 27 13 Custom Elevator Cab Finishes
   14 27 16 Custom Elevator Doors
14 28 00  Elevator Equipment and Controls
   14 28 16 Elevator Controls
   14 28 19 Elevator Equipment
   14 28 19.13 Elevator Safety Equipment
   14 28 19.16 Elevator Hoistway Equipment
14 30 00  Escalators and Moving Walks
14 31 00  Escalators
14 32 00  Moving Walks
14 33 00  Moving Ramps
   14 33 13 Motorized Ramps
   14 33 16 Powered Ramps
14 40 00  Lifts
14 41 00  People Lifts
   14 41 13 Counterbalanced People Lifts
   14 41 16 Endless-Belt People Lifts
   14 41 19 Stairway Chairlifts
14 42 00  Wheelchair Lifts
   14 42 13 Inclined Wheelchair Lifts
   14 42 16 Vertical Wheelchair Lifts
14 43 00  Platform Lifts
   14 43 13 Orchestra Lifts
   14 43 16 Stage Lifts
14 44 00  Sidewalk Lifts
14 45 00  Vehicle Lifts
  14 45 13  Vehicle Service Lifts
  14 45 23  Vehicle Parking Lifts
14 46 00  Material Lifts
14 70 00  Turntables
14 71 00  Industrial Turntables
  14 71 11  Vehicle Turntables
14 72 00  Hospitality Turntables
  14 72 25  Restaurant Turntables
14 73 00  Exhibit Turntables
  14 73 59  Display Turntables
14 74 00  Entertainment Turntables
  14 74 61  Stage Turntables
14 80 00  Scaffolding
14 81 00  Suspended Scaffolding
  14 81 13  Beam Scaffolding
  14 81 16  Carriage Scaffolding
  14 81 19  Hook Scaffolding
14 82 00  Rope Climbers
  14 82 13  Manual Rope Climbers
  14 82 16  Powered Rope Climbers
14 83 00  Elevating Platforms
  14 83 13  Telescoping Platform Lifts
  14 83 13.13 Electric and Battery Telescoping Platform Lifts
  14 83 13.16 Pneumatic Telescoping Platform Lifts
  14 83 16  Scissor Lift Platforms
  14 83 19  Multi-Axis Platform Lifts
14 84 00  Powered Scaffolding
  14 84 13  Window Washing Scaffolding
  14 84 23  Window Washing Hoists
14 90 00  Other Conveying Equipment
14 91 00  Facility Chutes
  14 91 13  Coal Chutes
  14 91 23  Escape Chutes
  14 91 33  Laundry and Linen Chutes
  14 91 82  Trash Chutes
14 92 00  Pneumatic Tube Systems
14 93 00  Slide Pole Systems
  14 93 13  Firehouse Slide Poles
21 00 00  Fire Suppression
21 01 00  Operation and Maintenance of Fire Suppression
  21 01 10  Operation and Maintenance of Water-Based Fire-Suppression Systems
  21 01 20  Operation and Maintenance of Fire-Extinguishing Systems
  21 01 30  Operation and Maintenance of Fire-Suppression Equipment
21 05 00  Common Work Results for Fire Suppression
   21 05 05  Selective Demolition for Fire Suppression
   21 05 13  Common Motor Requirements for Fire-Suppression Equipment
   21 05 16  Expansion Fittings and Loops for Fire-Suppression Piping
   21 05 17  Sleeves and Sleeve Seals for Fire-Suppression Piping
   21 05 19  Meters and Gages for Fire-Suppression Systems
   21 05 23  General-Duty Valves for Water-Based Fire-Suppression Piping
   21 05 29  Hangers and Supports for Fire-Suppression Piping and Equipment
   21 05 33  Heat Tracing for Fire-Suppression Piping
   21 05 48  Vibration and Seismic Controls for Fire-Suppression Piping and Equipment
21 05 48.13  Vibration Controls for Fire-Suppression Piping and Equipment
   21 05 53  Identification for Fire-Suppression Piping and Equipment
21 06 00  Schedules for Fire Suppression
   21 06 10  Schedules for Water-Based Fire-Suppression Systems
   21 06 20  Schedules for Fire-Extinguishing Systems
   21 06 30  Schedules for Fire-Suppression Equipment
21 07 00  Fire Suppression Systems Insulation
   21 07 16  Fire-Suppression Equipment Insulation
   21 07 19  Fire-Suppression Piping Insulation
21 08 00  Commissioning of Fire Suppression
21 09 00  Instrumentation and Control for Fire-Suppression Systems
21 10 00  Water-Based Fire-Suppression Systems
21 11 00  Facility Fire-Suppression Water-Service Piping
   21 11 16  Facility Fire Hydrants
   21 11 19  Fire-Department Connections
21 12 00  Fire-Suppression Standpipes
   21 12 13  Fire-Suppression Hoses and Nozzles
   21 12 16  Fire-Suppression Hose Reels
   21 12 19  Fire-Suppression Hose Racks
   21 12 23  Fire-Suppression Hose Valves
21 13 00  Fire-Suppression Sprinkler Systems
   21 13 13  Wet-Pipe Sprinkler Systems
   21 13 16  Dry-Pipe Sprinkler Systems
   21 13 19  Preaction Sprinkler Systems
   21 13 23  Combined Dry-Pipe and Preaction Sprinkler Systems
   21 13 26  Deluge Fire-Suppression Sprinkler Systems
   21 13 29  Water Spray Fixed Systems
   21 13 36  Antifreeze Sprinkler Systems
   21 13 39  Foam-Water Systems
21 16 00  Fire-Suppression Pressure Maintenance Pumps
21 20 00  Fire-Extinguishing Systems
21 21 00  Carbon-Dioxide Fire-Extinguishing Systems
   21 21 13  Carbon-Dioxide Fire-Extinguishing Piping
   21 21.13  High-Pressure, Carbon-Dioxide Fire-Extinguishing Systems
   21 21 16  Low-Pressure, Carbon-Dioxide Fire-Extinguishing Systems
   21 21 16  Carbon-Dioxide Fire-Extinguishing Equipment
21 22 00   Clean-Agent Fire-Extinguishing Systems
          21 22 13 Clean-Agent Fire-Extinguishing Piping
          21 22 16 Clean-Agent Fire-Extinguishing Equipment
21 23 00   Wet-Chemical Fire-Extinguishing Systems
          21 23 13 Wet-Chemical Fire-Extinguishing Piping
          21 23 16 Wet-Chemical Fire-Extinguishing Equipment
21 24 00   Dry-Chemical Fire-Extinguishing Systems
          21 24 13 Dry-Chemical Fire-Extinguishing Piping
          21 24 16 Dry-Chemical Fire-Extinguishing Equipment
21 30 00   Fire Pumps
21 31 00   Centrifugal Fire Pumps
          21 31 13 Electric-Drive, Centrifugal Fire Pumps
          21 31 16 Diesel-Drive, Centrifugal Fire Pumps
21 32 00   Vertical-Turbine Fire Pumps
          21 32 13 Electric-Drive, Vertical-Turbine Fire Pumps
          21 32 16 Diesel-Drive, Vertical-Turbine Fire Pumps
21 33 00   Positive-Displacement Fire Pumps
          21 33 13 Electric-Drive, Positive-Displacement Fire Pumps
          21 33 16 Diesel-Drive, Positive-Displacement Fire Pumps
21 34 00   Fire Pump Accessories
          21 34 13 Pressure Maintenance Pumps
21 40 00   Fire-Suppression Water Storage
21 41 00   Storage Tanks for Fire-Suppression Water
          21 41 13 Pressurized Storage Tanks for Fire-Suppression Water
          21 41 16 Elevated Storage Tanks for Fire-Suppression Water
          21 41 19 Roof-Mounted Storage Tanks for Fire-Suppression Water
          21 41 23 Ground Suction Storage Tanks for Fire-Suppression Water
          21 41 26 Underground Storage Tanks for Fire-Suppression Water
          21 41 29 Storage Tanks for Fire-Suppression Water Additives
22 00 00   Plumbing
22 01 00   Operation and Maintenance of Plumbing
          22 01 10 Operation and Maintenance of Plumbing Piping and Pumps
          22 01 10.16 Video Piping Inspections
          22 01 10.51 Plumbing Piping Cleaning
          22 01 10.61 Plumbing Piping Repairs
          22 01 10.62 Plumbing Piping Relining
          22 01 30 Operation and Maintenance of Plumbing Equipment
          22 01 40 Operation and Maintenance of Plumbing Fixtures
          22 01 50 Operation and Maintenance of Pool and Fountain Plumbing Systems
          22 01 60 Operation and Maintenance of Laboratory and Healthcare Systems
22 05 00   Common Work Results for Plumbing
          22 05 05 Selective Demolition for Plumbing
          22 05 13 Common Motor Requirements for Plumbing Equipment
          22 05 16 Expansion Fittings and Loops for Plumbing Piping
          22 05 17 Sleeves and Sleeve Seals for Plumbing Piping
          22 05 19 Meters and Gages for Plumbing Piping
22 05 23  General-Duty Valves for Plumbing Piping
22 05 29  Hangers and Supports for Plumbing Piping and Equipment
22 05 33  Heat Tracing for Plumbing Piping
22 05 48  Vibration and Seismic Controls for Plumbing Piping and Equipment
22 05 48.13 Vibration Controls for Plumbing Piping and Equipment
22 05 53  Identification for Plumbing Piping and Equipment
22 05 73  Facility Drainage Manholes
22 05 76  Facility Drainage Piping Cleanouts

22 06 00  Schedules for Plumbing
22 06 10  Schedules for Plumbing Piping and Pumps
22 06 10.13 Plumbing Pump Schedule
22 06 12  Schedules for Facility Potable Water Storage
22 06 15  Schedules for General Service Compressed-Air Equipment
22 06 30  Schedules for Plumbing Equipment
22 06 30.13 Domestic Water Heater Schedule
22 06 40  Schedules for Plumbing Fixtures
22 06 40.13 Plumbing Fixture Schedule
22 06 50  Schedules for Pool and Fountain Plumbing Systems
22 06 60  Schedules for Laboratory and Healthcare Systems

22 07 00  Plumbing Insulation
22 07 16  Plumbing Equipment Insulation
22 07 19  Plumbing Piping Insulation

22 08 00  Commissioning of Plumbing

22 09 00  Instrumentation and Control for Plumbing
22 09 63  Medical Gas Alarms

22 10 00  Plumbing Piping

22 11 00  Facility Water Distribution
22 11 13  Facility Water Distribution Piping
22 11 16  Domestic Water Piping
22 11 17  Gray-Water Piping
22 11 19  Domestic Water Piping Specialties
22 11 23  Domestic Water Pumps
22 11 23.13 Domestic-Water Packaged Booster Pumps
22 11 23.23 Domestic-Water In-Line Pumps
22 11 23.26 Close-Coupled, Horizontally Mounted, In-Line Centrifugal Domestic-Water Pumps
22 11 23.29 Close-Coupled, Vertically Mounted, In-Line Centrifugal Domestic-Water Pumps
22 11 23.33 Separately Coupled, In-Line Centrifugal Domestic-Water Pumps
22 11 23.36 Separately Coupled, Horizontally Mounted, In-Line Centrifugal Domestic-Water Pumps
22 11 23.43 Domestic-Water, Base-Mounted Pumps
22 11 63  Gray-Water Pumps

22 12 00  Facility Potable-Water Storage Tanks
22 12 13  Facility Roof-Mounted, Potable-Water Storage Tanks
22 12 16  Facility Elevated, Potable-Water Storage Tanks
22 12 19  Facility Ground-Mounted, Potable-Water Storage Tanks
22 12 21  Facility Underground Potable-Water Storage Tanks
22 12 23  Facility Indoor Potable-Water Storage Tanks
22 12 23.13 Facility Steel, Indoor Potable-Water Storage Pressure Tanks
22 12 23.16 Facility Steel, Indoor Potable-Water Storage Non-Pressure Tanks
22 12 23.23 Facility Plastic, Indoor Potable-Water Storage Pressure Tanks
22 12 23.26 Facility Plastic, Indoor Potable-Water Storage Non-Pressure Tanks

22 13 00 Facility Sanitary Sewerage
22 13 13 Facility Sanitary Sewers
22 13 16 Sanitary Waste and Vent Piping
22 13 19 Sanitary Waste Piping Specialties
22 13 19.13 Sanitary Drains
22 13 19.23 Fats, Oils, and Grease Disposal Systems
22 13 19.26 Grease Removal Devices
22 13 19.33 Backwater Valves
22 13 19.36 Air-Admittance Valves
22 13 23 Sanitary Waste Interceptors
22 13 26 Sanitary Waste Separators
22 13 29 Sanitary Sewerage Pumps
22 13 29.13 Wet-Pit-Mounted, Vertical Sewerage Pumps
22 13 29.16 Submersible Sewerage Pumps
22 13 29.23 Sewerage Pump Reverse-Flow Assemblies
22 13 29.33 Sewerage Pump Basins and Pits
22 13 33 Packaged, Submersible Sewerage Pump Units
22 13 36 Packaged, Wastewater Pump Units
22 13 43 Facility Packaged Sewage Pumping Stations
22 13 43.13 Facility Dry-Well Packaged Sewage Pumping Stations
22 13 43.16 Facility Wet-Well Packaged Sewage Pumping Stations
22 13 63 Facility Gray Water Tanks

22 14 00 Facility Storm Drainage
22 14 13 Facility Storm Drainage Piping
22 14 16 Rainwater Leaders
22 14 19 Sump Pump Discharge Piping
22 14 23 Storm Drainage Piping Specialties
22 14 26 Facility Storm Drains
22 14 26.13 Roof Drains
22 14 26.16 Facility Area Drains
22 14 26.19 Facility Trench Drains
22 14 29 Sump Pumps
22 14 29.13 Wet-Pit-Mounted, Vertical Sump Pumps
22 14 29.16 Submersible Sump Pumps
22 14 29.19 Sump-Pump Basins and Pits
22 14 33 Packaged, Pedestal Drainage Pump Units
22 14 36 Packaged, Submersible, Drainage Pump Units
22 14 53 Rainwater Storage Tanks
22 14 63 Facility Storm-Water Retention Tanks

22 15 00 General Service Compressed-Air Systems
22 15 13 General Service Compressed-Air Piping
22 15 16 General Service Compressed-Air Valves
22 15 19 General Service Packaged Air Compressors and Receivers
22 15 19.13 General Service Packaged Reciprocating Air Compressors
22 15 19.16 General Service Packaged Liquid-Ring Air Compressors
22 15 19.19 General Service Packaged Rotary-Screw Air Compressors
22 15 19.23 General Service Packaged Sliding-Vane Air Compressors

22 30 00 Plumbing Equipment
22 31 00 Domestic Water Softeners
22 31 13 Residential Domestic Water Softeners
22 32 00 **Domestic Water Filtration Equipment**
22 32 13 Domestic-Water Bag-Type Filters
22 32 16 Domestic-Water Freestanding Cartridge Filters
22 32 19 Domestic-Water Off-Floor Cartridge Filters
22 32 23 Domestic-Water Carbon Filters
22 32 26 Domestic-Water Sand Filters
22 32 26.13 Domestic-Water Circulating Sand Filters
22 32 26.16 Domestic-Water Multimedia Sand Filters
22 32 26.19 Domestic-Water Greensand Filters

22 32 13 Domestic Water Softeners
22 32 30 Residential, Electric Domestic Water Heaters
22 33 00 **Electric Domestic Water Heaters**
22 33 13 Instantaneous Electric Domestic Water Heaters
22 33 13.13 Flow-Control, Instantaneous Electric Domestic Water Heaters
22 33 13.16 Thermostat-Control, Instantaneous Electric Domestic Water Heaters
22 33 30 Residential, Electric Domestic Water Heaters
22 33 30.13 Residential, Small-Capacity Electric Domestic Water Heaters
22 33 30.16 Residential, Storage Electric Domestic Water Heaters
22 33 30.23 Residential, Collector-to-Tank, Solar-Electric Domestic Water Heaters
22 33 30.26 Residential, Collector-to-Tank, Heat-Exchanger-Coil, Solar-Electric Domestic Water Heaters
22 33 33 Light-Commercial Electric Domestic Water Heaters
22 33 36 Commercial Domestic Water Electric Booster Heaters
22 33 36.13 Commercial Domestic Water Electric Booster Heaters
22 33 36.16 Commercial Storage Electric Domestic Water Heaters

22 33 00 **Fuel-Fired Domestic Water Heaters**
22 34 13 Instantaneous, Tankless, Gas Domestic Water Heaters
22 34 30 Residential Gas Domestic Water Heaters
22 34 30.13 Residential, Atmospheric, Gas Domestic Water Heaters
22 34 30.16 Residential, Direct-Vent, Gas Domestic Water Heaters
22 34 30.19 Residential, Power-Vent, Gas Domestic Water Heaters
22 34 36 Commercial Gas Domestic Water Heaters
22 34 36.13 Commercial, Atmospheric, Gas Domestic Water Heaters
22 34 36.16 Commercial, Power-Burner, Gas Domestic Water Heaters
22 34 36.19 Commercial, Power-Vent, Gas Domestic Water Heaters
22 34 36.23 Commercial, High-Efficiency, Gas Domestic Water Heaters
22 34 36.26 Commercial, Coil-Type, Finned-Tube, Gas Domestic Water Heaters
22 34 36.29 Commercial, Grid-Type, Finned-Tube, Gas Domestic Water Heaters
22 34 46 Oil-Fired Domestic Water Heaters
22 34 46.13 Large-Capacity, Oil-Fired Domestic Water Heaters
22 34 56 Dual-Fuel-Fired Domestic Water Heaters

22 35 00 **Domestic Water Heat Exchangers**
22 35 13 Instantaneous Domestic Water Heat Exchangers
22 35 13.13 Heating-Fluid-in-Coil, Instantaneous Domestic Water Heat Exchangers
22 35 13.16 Domestic-Water-in-Coil, Instantaneous Domestic Water Heat Exchangers
22 35 23 Circulating, Domestic Water Heat Exchangers
22 35 23.13 Circulating, Compact Domestic Water Heat Exchangers
22 35 23.16 Circulating, Storage Domestic Water Heat Exchangers
22 35 29 Noncirculating, Domestic Water Heat Exchangers
22 35 29.13 Noncirculating, Compact Domestic Water Heat Exchangers
22 35 29.16 Noncirculating, Storage Domestic Water Heat Exchangers
22 35 36 Domestic Water Brazed-Plate Heat Exchangers
22 35 39  Domestic Water Frame-and-Plate Heat Exchangers  
22 35 43  Domestic Water Heat Reclaimers  
22 36 00  Domestic Water Preheaters  
22 36 13  Solar Domestic Water Preheaters  
22 36 23  Geothermal Domestic Water Preheaters  
22 40 00  Plumbing Fixtures  
22 41 00  Residential Plumbing Fixtures  
22 41 13  Residential Water Closets, Urinals, and Bidets  
22 41 13.13  Residential Water Closets  
22 41 13.16  Residential Urinals  
22 41 13.19  Residential Bidets  
22 41 16  Residential Lavatories and Sinks  
22 41 16.13  Residential Lavatories  
22 41 16.16  Residential Sinks  
22 41 19  Residential Bathtubs  
22 41 23  Residential Showers  
22 41 26  Residential Disposers  
22 41 36  Residential Laundry Trays  
22 41 39  Residential Faucets, Supplies, and Trim  
22 42 00  Commercial Plumbing Fixtures  
22 42 13  Commercial Water Closets, Urinals, and Bidets  
22 42 13.13  Commercial Water Closets  
22 42 13.16  Commercial Urinals  
22 42 16  Commercial Lavatories and Sinks  
22 42 16.13  Commercial Lavatories  
22 42 16.16  Commercial Sinks  
22 42 19  Commercial Bathtubs  
22 42 23  Commercial Showers  
22 42 26  Commercial Disposers  
22 42 29  Shampoo Bowls  
22 42 33  Wash Fountains  
22 42 36  Commercial Laundry Trays  
22 42 39  Commercial Faucets, Supplies, and Trim  
22 42 43  Flushometers  
22 43 00  Healthcare Plumbing Fixtures  
22 43 13  Healthcare Water Closets  
22 43 16  Healthcare Sinks  
22 43 19  Healthcare Bathtubs  
22 43 23  Healthcare Showers  
22 43 39  Healthcare Faucets  
22 43 43  Healthcare Plumbing Fixture Flushometers  
22 45 00  Emergency Plumbing Fixtures  
22 45 13  Emergency Showers  
22 45 16  Eyewash Equipment  
22 45 19  Self-Contained Eyewash Equipment  
22 45 23  Personal Eyewash Equipment  
22 45 26  Eye/Face Wash Equipment  
22 45 29  Hand-Held Emergency Drench Hoses  
22 45 33  Combination Emergency Fixture Units  
22 45 36  Emergency Fixture Water-Tempering Equipment
22 46 00  Security Plumbing Fixtures
   22 46 13  Security Water Closets and Urinals
   22 46 13.13  Security Water Closets
   22 46 13.16  Security Urinals
   22 46 16  Security Lavatories and Sinks
   22 46 16.13  Security Lavatories
   22 46 16.16  Security Sinks
   22 46 19  Security Showers
   22 46 39  Security Faucets, Supplies, and Trim
   22 46 43  Security Plumbing Fixture Flushometers
   22 46 53  Security Plumbing Fixture Supports

22 47 00  Drinking Fountains and Water Coolers
   22 47 13  Drinking Fountains
   22 47 16  Pressure Water Coolers
   22 47 19  Water-Station Water Coolers
   22 47 23  Remote Water Coolers

22 50 00  Pool and Fountain Plumbing Systems

22 51 00  Swimming Pool Plumbing Systems
   22 51 13  Swimming Pool Piping
   22 51 16  Swimming Pool Pumps
   22 51 19  Swimming Pool Water Treatment Equipment
   22 51 23  Swimming Pool Equipment Controls

22 52 00  Fountain Plumbing Systems
   22 52 13  Fountain Piping
   22 52 16  Fountain Pumps
   22 52 19  Fountain Water Treatment Equipment
   22 52 23  Fountain Equipment Controls

22 60 00  Gas and Vacuum Systems for Laboratory and Healthcare Facilities

22 61 00  Compressed-Air Systems for Laboratory and Healthcare Facilities
   22 61 13  Compressed-Air Piping for Laboratory and Healthcare Facilities
   22 61 13.53  Laboratory Compressed-Air Piping
   22 61 13.70  Healthcare Compressed-Air Piping
   22 61 13.74  Dental Compressed-Air Piping
   22 61 19  Compressed-Air Equipment for Laboratory and Healthcare Facilities
   22 61 19.53  Laboratory Compressed-Air Equipment
   22 61 19.70  Healthcare Compressed-Air Equipment
   22 61 19.74  Dental Compressed-Air Equipment

22 62 00  Vacuum Systems for Laboratory and Healthcare Facilities
   22 62 13  Vacuum Piping for Laboratory and Healthcare Facilities
   22 62 13.53  Laboratory Vacuum Piping
   22 62 13.70  Healthcare, Surgical Vacuum Piping
   22 62 13.74  Dental Vacuum Piping
   22 62 19  Vacuum Equipment for Laboratory and Healthcare Facilities
   22 62 19.53  Laboratory Vacuum Equipment
   22 62 19.70  Healthcare Vacuum Equipment
22 62 19.74  Dental Vacuum and Evacuation Equipment
22 62 23  Waste Anesthesia-Gas Piping

22 63 00  **Gas Systems for Laboratory and Healthcare Facilities**
22 63 13  Gas Piping for Laboratory and Healthcare Facilities
22 63 13.53  Laboratory Gas Piping
22 63 13.70  Healthcare Gas Piping
22 63 19  Gas Storage Tanks for Laboratory and Healthcare Facilities
22 63 19.53  Laboratory Gas Storage Tanks
22 63 19.70  Healthcare Gas Storage Tanks

22 66 00  **Chemical-Waste Systems for Laboratory and Healthcare Facilities**
22 66 53  Laboratory Chemical-Waste and Vent Piping
22 66 70  Healthcare Chemical-Waste and Vent Piping
22 66 83  Chemical-Waste Tanks
22 66 83.13  Chemical-Waste Dilution Tanks
22 66 83.16  Chemical-Waste Neutralization Tanks

22 67 00  **Processed Water Systems for Laboratory and Healthcare Facilities**
22 67 13  Processed Water Piping for Laboratory and Healthcare Facilities
22 67 13.13  Distilled-Water Piping
22 67 13.16  Reverse-Osmosis Water Piping
22 67 13.19  Deionized-Water Piping
22 67 19  Processed Water Equipment for Laboratory and Healthcare Facilities
22 67 19.13  Distilled-Water Equipment
22 67 19.16  Reverse-Osmosis Water Equipment
22 67 19.19  Deionized-Water Equipment

23 00 00  **Heating, Ventilating, and Air Conditioning (HVAC)**

23 01 00  **Operation and Maintenance of HVAC Systems**
23 01 10  Operation and Maintenance of Facility Fuel Systems
23 01 20  Operation and Maintenance of HVAC Piping and Pumps
23 01 30  Operation and Maintenance of HVAC Air Distribution
23 01 30.51  HVAC Air-Distribution System Cleaning
23 01 50  Operation and Maintenance of Central Heating Equipment
23 01 60  Operation and Maintenance of Central Cooling Equipment
23 01 60.71  Refrigerant Recovery/Recycling
23 01 70  Operation and Maintenance of Central HVAC Equipment
23 01 80  Operation and Maintenance of Decentralized HVAC Equipment
23 01 90  Diagnostic Systems for HVAC

23 05 00  **Common Work Results for HVAC**
23 05 05  Selective Demolition for Heating, Ventilating, and Air Conditioning (HVAC)
23 05 13  Common Motor Requirements for HVAC Equipment
23 05 16  Expansion Fittings and Loops for HVAC Piping
23 05 17  Sleeves and Sleeve Seals for HVAC Piping
23 05 19  Meters and Gages for HVAC Piping
23 05 23  General-Duty Valves for HVAC Piping
23 05 29  Hangers and Supports for HVAC Piping and Equipment
23 05 33  Heat Tracing for HVAC Piping
23 05 48  Vibration and Seismic Controls for HVAC
23 05 48.13  Vibration Controls for HVAC
23 05 53  Identification for HVAC Piping and Equipment
23 05 63  Anti-Microbial Coatings for HVAC Ducts and Equipment
23 05 66  Anti-Microbial Ultraviolet Emitters for HVAC Ducts and Equipment
23 05 93  Testing, Adjusting, and Balancing for HVAC

23 06 00  Schedules for HVAC
23 06 10  Schedules for Facility Fuel Service Systems
23 06 20  Schedules for HVAC Piping and Pumps
23 06 20.13  Hydronic Pump Schedule
23 06 30  Schedules for HVAC Air Distribution
23 06 30.13  HVAC Fan Schedule
23 06 30.16  Air Terminal Unit Schedule
23 06 30.19  Air Outlet and Inlet Schedule
23 06 50  Schedules for Central Heating Equipment
23 06 50.13  Heating Boiler Schedule
23 06 60  Schedules for Central Cooling Equipment
23 06 60.13  Refrigerant Condenser Schedule
23 06 60.16  Packaged Water Chiller Schedule
23 06 70  Schedules for Central HVAC Equipment
23 06 70.13  Indoor, Central-Station Air-Handling Unit Schedule
23 06 70.16  Packaged Outdoor HVAC Equipment Schedule
23 06 80  Schedules for Decentralized HVAC Equipment
23 06 80.13  Decentralized Unitary HVAC Equipment Schedule
23 06 80.16  Convection Heating and Cooling Unit Schedule
23 06 80.19  Radiant Heating Unit Schedule

23 07 00  HVAC Insulation
23 07 13  Duct Insulation
23 07 16  HVAC Equipment Insulation
23 07 19  HVAC Piping Insulation

23 08 00  Commissioning of HVAC

23 09 00  Instrumentation and Control for HVAC
23 09 13  Instrumentation and Control Devices for HVAC
23 09 13.13  Actuators and Operators
23 09 13.23  Sensors and Transmitters
23 09 13.33  Control Valves
23 09 13.43  Control Dampers
23 09 23  Direct-Digital Control System for HVAC
23 09 23.11  Control Valves
23 09 23.12  Control Dampers
23 09 23.13  Energy Meters
23 09 23.14  Flow Instruments
23 09 23.16  Gas Instruments
23 09 23.17  Level Instruments
23 09 23.18  Leak Detection Instruments
23 09 23.19  Moisture Instruments
23 09 23.21  Motion Instruments
23 09 23.22  Position Instruments
23 09 23.23  Pressure Instruments
23 09 23.24  Speed Instruments
23 09 23.27  Temperature Instruments
23 09 23.33  Vibration Instruments
23 09 23.43  Weather Stations
23 09 33 Electric and Electronic Control System for HVAC
23 09 43 Pneumatic Control System for HVAC
23 09 53 Pneumatic and Electric Control System for HVAC
23 09 93 Sequence of Operations for HVAC Controls
23 09 93.11 Sequence of Operation for HVAC DDC

### 23 10 00 Facility Fuel Systems

#### 23 10 00 Facility Fuel Systems

#### 23 11 00 Facility Fuel Piping

- 23 11 13 Facility Fuel-Oil Piping
- 23 11 16 Facility Gasoline Piping
- 23 11 23 Facility Natural-Gas Piping
- 23 11 26 Facility Liquefied-Petroleum Gas Piping

#### 23 12 00 Facility Fuel Pumps

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26 12 19 Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers

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26 13 13 Medium-Voltage Circuit Breaker Switchgear
26 13 16 Medium-Voltage Fusible Interrupter Switchgear
26 13 19 Medium-Voltage Vacuum Interrupter Switchgear
26 13 23 Medium-Voltage Metal-Enclosed Switchgear
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26 21 00 Low-Voltage Electrical Service Entrance
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- 40 05 23.33 Special-Fabrication Stainless Steel Process Pipe and Tubing
- 40 05 24 Steel Process Pipe
- 40 05 24.13 Steel Pipe and Tubing for Air and Gas Service
- 40 05 24.23 Steel Pipe for Water Service
- 40 05 24.26 Steel Pipe and Tubing for Process Liquid Service
- 40 05 24.33 Steel Pipe for Bulk Materials Conveyance
- 40 05 26 Other Metals Process Pipe
- 40 05 26.13 Titanium Process Pipe
- 40 05 26.23 Tantalum Process Pipe
- 40 05 26.33 Zirconium Process Pipe
- 40 05 31 Thermoplastic Process Pipe
- 40 05 31.13 Polyvinyl Chloride Process Pipe
- 40 05 31.23 Chlorinated Polyvinyl Chloride Process Pipe
- 40 05 31.33 ABS Process Pipe
- 40 05 31.43 Polypropylene Process Pipe
- 40 05 31.53 PVDF Process Pipe
- 40 05 31.63 High-Purity Plastic Process Pipe
- 40 05 31.83 Flexible Plastic Tubing
- 40 05 33 High-Density Polyethylene Process Pipe
- 40 05 36 Fiberglass-Reinforced Plastic Process Pipe
- 40 05 36.13 Fiberglass-Reinforced Plastic Pipe for Process Air, Gas, and Odor Service
40 05 36.23 Fiberglass-Reinforced Plastic Pipe for Process Liquid Service
40 05 37 Centrifugally Cast Fiberglass-Reinforced Polymer Mortar Process Pipe
40 05 38 PTFE Process Pipe
40 05 39 Concrete Pipe
40 05 39.13 Concrete Pressure Water Pipe
40 05 39.23 Concrete Gravity and Drainage Process Pipe
40 05 51 Common Requirements for Process Valves
40 05 53 Process Valves Four-inch Diameter and Larger
40 05 56 Process Valves, Smaller than Four-inch Diameter
40 05 57 Actuators for Process Valves and Gates
40 05 57.13 Manual Actuators
40 05 57.23 Electric Motor Actuators
40 05 57.33 Hydraulic Cylinder Actuators
40 05 57.43 Hydraulic Actuator Systems
40 05 57.53 Pneumatic Actuators
40 05 59 Hydraulic Gates
40 05 59.13 Stop Plates
40 05 59.16 Stop Logs
40 05 59.21 Aluminum Slide Gates
40 05 59.23 Stainless Steel Slide Gates
40 05 59.26 Fiberglass-Reinforced Plastic Slide Gates
40 05 59.33 Cast Iron Slide Gates
40 05 59.43 Butterfly Gates
40 05 61 Gate Valves
40 05 61.13 Solid Wedge Metal-Seated Gate Valves
40 05 61.16 Double Disc Metal-Seated Gate Valves
40 05 61.23 Resilient-Seated Gate Valves
40 05 61.43 Knife Gate Valves
40 05 62 Plug Valves
40 05 62.13 Eccentric Plug Valves for Gas Service
40 05 62.16 Eccentric Plug Valves for Liquid Service
40 05 63 Ball Valves
40 05 63.13 AWWA Metal-Seated Ball Valves
40 05 63.16 AWWA Resilient-Seated Ball Valves
40 05 63.33 Metallic Ball Valves
40 05 63.43 Plastic Ball Valves
40 05 64 Butterfly Valves
40 05 64.13 Metal-Seated Butterfly Valves
40 05 64.16 AWWA Resilient-Seated Butterfly Valves
40 05 64.23 Metallic Industrial Butterfly Valves
40 05 64.26 Plastic Industrial Butterfly Valves
40 05 64.33 Butterfly Valves in Air or Gas Service
40 05 64.36 High-Performance Butterfly Valves in Air or Gas Service
40 05 64.43 Dampers for Corrosive Gas Service
40 05 65 Valves for Pump Control and Check Service
40 05 65.11 Angle Valves
40 05 65.13 Cone Valves
40 05 65.16 Globe Valves
40 05 65.23 Swing Check Valves
40 05 65.26 Tilting Disc Check Valves
40 05 65.29 Double-Disk Check Valves
40 05 67 Specialized Pressure and Flow-Control Valves
40 05 67.13 Reduced-Pressure Zone Backflow Preventers for Process Service
40 05 67.16 Double Check Valve Assembly Backflow Preventers for Process Service
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Atmospheric Vacuum Breaker Backflow Preventers
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Pressure-Regulating Valves
Pressure-Relief Valves
Direct-Acting Surge Relief Valves for Water Service
Pilot-Operated Surge Relief Valves for Water Service
Pilot-Operated Surge Arrestor Valves for Water Service
Electronic Surge Anticipator Valves for Water Service
Surge Relief Valves for Wastewater Service
Electronic Surge Anticipator Valves for Wastewater Service
Duckbill Check Valves
Flap Gates
Mud Valves
Telescoping Valves
Special-Application Process Valves
Altitude Valves
Float Valves
Anti-Cavitation Valves
Flexible-Closure Valves
Diaphragm Valves
Pinch Valves
Hot-Tapping Valves and Appurtenances
Tapping Sleeves and Valves
Tapping Machines
Line Stops
Air Valves for Water and Wastewater Service
Air Release Valves for Water Service
Air/Vacuum Valves for Water Service
Vacuum-Breaking Valves for Water Service
Combination Air Valves for Water Service
Air Release Valves for Wastewater Service
Air/Vacuum Valves for Wastewater Service
Vacuum-Breaking Valves for Wastewater Service
Combination Air Valves for Wastewater Service
Hydrants and Hose Bibbs for Process Service
Fire Hydrants
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Freeze-Proof Yard Hydrants
Hose Bibbs
Solenoid Valves for Process Service
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Schedules for Gas and Vapor Process Piping and Ductwork
Schedules for Liquids Process Piping
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40 06 40 Schedules for Process Piping and Equipment Protection
40 06 60 Schedules for Process Control and Process Facility Enterprise Management Systems
40 06 70 Schedules of Instrumentation for Process Systems
40 06 90 Schedules for Primary Control Devices

**40 10 00** Gas and Vapor Process Piping and Ductwork

**40 11 00** Steam Process Piping
- 40 11 13 Low-Pressure Steam Process Piping
- 40 11 16 Intermediate-Pressure Steam Process Piping
- 40 11 19 High-Pressure Steam Process Piping
- 40 11 23 Condensate Process Piping for Process Applications

**40 12 00** Compressed Air Process Piping
- 40 12 13 Compressed Air Process Piping for Breathing Service
- 40 12 23 Low-Pressure Compressed Air Process Piping
- 40 12 53 High-Pressure Compressed Air Process Piping

**40 13 00** Process Ductwork

**40 15 00** Combustion System Gas Piping
- 40 15 13 Combustion Air Piping
- 40 15 16 Oxygen Combustion System Gas Piping
- 40 15 19 Flue-Gas Combustion System Piping
- 40 15 23 Exothermic-Gas Combustion System Piping
- 40 15 26 Endothermic-Gas Combustion System Piping
- 40 15 29 Dissociated-Ammonia-Gas Combustion System Piping

**40 16 00** Specialty and High-Purity Gases Piping
- 40 16 13 Ammonia Gas Piping
- 40 16 16 Boron Gas Piping
- 40 16 17 Chlorine Gas Piping
- 40 16 26 Diborane Gas Piping
- 40 16 29 Fluorine Gas Piping
- 40 16 33 Hydrogen Sulfide Gas Piping
- 40 16 36 Nitrous-Oxide Gas Process Piping
- 40 16 37 Oxygen Gas Process Piping
- 40 16 39 Ozone Gas Process Piping
- 40 16 43 Phosphine Gas Piping
- 40 16 46 Silane Gas Piping
- 40 16 49 Sulfur-Dioxide Gas Piping
- 40 16 53 Specialty Gas Mixtures Piping
- 40 16 56 High-Purity Gas Piping Components

**40 17 00** Welding and Cutting Gases Piping
- 40 17 13 Acetylene Welding and Cutting Piping
- 40 17 16 Acetylene-Hydrogen Mix Welding and Cutting Piping
- 40 17 19 Methylacetylene-Propadiene Welding and Cutting Piping
- 40 17 23 Oxygen Welding and Cutting Piping
- 40 17 26 Inert Gas Welding and Cutting Piping

**40 18 00** Vacuum Systems Process Piping
- 40 18 13 Low-Vacuum Systems Process Piping
- 40 18 23 Chlorine Gas Vacuum System Piping
40 18 53  High-Vacuum Systems Process Piping

40 20 00  Liquids Process Piping

40 21 00  Liquid Fuel Process Piping
40 21 13  Bio Fuels Process Piping
40 21 13.13  Bioalcohols Process Piping
40 21 13.23  Biodiesel Fuel Process Piping
40 21 13.26  Green Diesel Fuel Process Piping
40 21 13.33  Biomass-to-Liquid (BTL) Fuel Process Piping
40 21 13.43  Gas-to-Liquid (GTL) Fuel Process Piping
40 21 16  Gasoline Process Piping
40 21 19  Diesel Process Piping
40 21 23  Fuel-Oils Process Piping
40 21 23.13  No. 1 Fuel-Oil Process Piping
40 21 23.23  No. 2 Fuel-Oil Process Piping
40 21 23.26  Kerosene Process Piping
40 21 23.29  Tar Fuels Process Piping
40 21 23.43  No. 4 Fuel-Oil Process Piping
40 21 23.53  No. 5 Fuel-Oil Process Piping
40 21 23.63  No. 6 Fuel-Oil Process Piping

40 22 00  Petroleum Products Piping
40 22 10  Heavy-Fractions Petroleum Products Piping
40 22 13  Liquefied Petroleum Gas (LPG) Process Piping
40 22 16  Lubricating Oils Process Piping
40 22 23  Petrochemicals Process Piping
40 22 50  Light-Fractions Petroleum Products Piping

40 23 00  Water and Wastewater Process Piping
40 23 13  Deionized Water Process Piping
40 23 16  Distilled-Water Process Piping
40 23 19  Non-Potable Plant Water Process Piping
40 23 23  Potable Water Process Piping
40 23 29  Recirculated Water Process Piping
40 23 33  Reverse-Osmosis Water Process Piping
40 23 40  Sanitary Wastewater Process Piping
40 23 41  Grit Process Piping
40 23 43  Scum and Floatables Process Piping
40 23 44  Primary Sludge Process Piping
40 23 46  Waste Sludge Process Piping
40 23 48  Thickened Sludge Process Piping

40 24 00  Specialty Liquid Chemicals Piping
40 24 13  Alcohol Piping
40 24 14  Liquid Chlorine and Sodium Hypochlorite Piping
40 24 16  Gel Piping
40 24 19  Slurries Process Piping
40 24 23  Thixotropic Liquid Piping

40 25 00  Liquid Acids and Bases Piping
40 25 10  Liquid Acids Piping
40 25 50  Liquid Bases Piping

40 26 00  Liquid Polymer Piping
40 30 00  Solid and Mixed Materials Piping and Chutes

40 32 00  Bulk Materials Piping and Chutes
  40 32 10  Abrasive Materials Piping and Chutes
  40 32 50  Nonabrasive Materials Piping and Chutes

40 33 00  Bulk Materials Valves
  40 33 13  Airlock Bulk Materials Valves
  40 33 16  Blind Bulk Materials Valves
  40 33 26  Diverter Bulk Materials Valves
  40 33 29  Double or Single Dump Bulk Materials Valves
  40 33 39  Swing Bulk Materials Valves
  40 33 43  Specialty Bulk Materials Valves

40 34 00  Pneumatic Conveying Lines
  40 34 10  Dense Phase Pneumatic Conveying Lines
  40 34 50  Dilute Phase Pneumatic Conveying Lines

40 40 00  Process Piping and Equipment Protection

40 41 00  Process Piping and Equipment Heat Tracing
  40 41 13  Process Piping Heat Tracing
  40 41 13.13  Process Piping Electrical Resistance Heat Tracing
  40 41 13.16  Process Piping Electrical Conductance Heat Tracing
  40 41 13.19  Process Piping Gas Heat Tracing
  40 41 13.23  Process Piping Steam Heat Tracing
  40 41 13.26  Process Piping Thermal Fluids Heat Tracing
  40 41 23  Process Equipment Heat Tracing
  40 41 23.13  Process Equipment Electrical Resistance Heat Tracing
  40 41 23.16  Process Equipment Electrical Conductance Heat Tracing
  40 41 23.19  Process Equipment Gas Heat Tracing
  40 41 23.23  Process Equipment Steam Heat Tracing
  40 41 23.26  Process Equipment Thermal Fluids Heat Tracing

40 42 00  Process Piping and Equipment Insulation
  40 42 13  Process Piping Insulation
  40 42 13.13  Cryogenic Temperature Process Piping Insulation
  40 42 13.16  Low Temperature Process Piping Insulation
  40 42 13.19  Intermediate Temperature Process Piping Insulation
  40 42 13.23  High Temperature Process Piping Insulation
  40 42 13.26  Process Piping Insulation for Specialty Applications
  40 42 23  Process Equipment Insulation
  40 42 23.13  Cryogenic Temperature Process Equipment Insulation
  40 42 23.16  Low Temperature Process Equipment Insulation
  40 42 23.19  Intermediate Temperature Process Equipment Insulation
  40 42 23.23  High Temperature Process Equipment Insulation
  40 42 23.26  Process Equipment Insulation for Specialty Applications

40 46 00  Process Corrosion Protection
  40 46 16  Coatings and Wrappings for Process Corrosion Protection
  40 46 42  Cathodic Process Corrosion Protection

40 47 00  Refractories
  40 47 13  Silica Refractories
  40 47 16  Alumina Refractories
  40 47 19  Carbon and Graphite Refractories
40 47 23 Castable Refractories
40 47 26 Rammed Refractories
40 47 29 Refractory Concrete

**40 60 00 Process Control and Enterprise Management Systems**

40 61 00 Process Control and Enterprise Management Systems

**General Provisions**

40 61 13 Process Control System General Provisions
40 61 16 Enterprise Management System General Provisions
40 61 21 Process Control System Testing
40 61 26 Process Control System Training
40 61 93 Process Control System Input/Output List
40 61 96 Process Control Descriptions

**40 62 00 Computer System Hardware and Ancillaries**

40 62 13 Server Computers
40 62 16 Operator Workstation Computers
40 62 19 Industrial Computers
40 62 21 Desktop Computers
40 62 23 Mobile Computers
40 62 26 Laptop Computers
40 62 29 Tablet Computers and Mobile Devices
40 62 33 Printers
40 62 43 Large Display Screens
40 62 63 Operator Interface Terminals (OIT)

**40 63 00 Control System Equipment**

40 63 13 Distributed Process Control Systems
40 63 43 Programmable Logic Controllers
40 63 83 Remote Terminal Units

**40 66 00 Network and Communication Equipment**

40 66 13 Switches and Routers
40 66 16 Firewall Hardware
40 66 19 Media Converters
40 66 23 Frame Relay Equipment
40 66 26 Device Network Equipment
40 66 33 Metallic and Fiber-Optic Communication Cabling and Connectors
40 66 36 Process Instrumentation Networks
40 66 43 Wireless Network Systems
40 66 53 Multiple Address Radio Equipment
40 66 56 Point-to-Point Radio Equipment
40 66 63 Antennas
40 66 66 Monopoles and Towers
40 66 73 Satellite Communication Equipment

**40 67 00 Control System Equipment Panels and Racks**

40 67 13 Computer Equipment Racks
40 67 16 Free-Standing Panels
40 67 19 Wall-Mounted Panels
40 67 23 Control System Consoles
40 67 33 Panel Wiring
40 67 63  Control Panel-Mounted Uninterruptible Power Supply

40 68 00  Process Control Software
40 68 13  Process Control (HMI) Software
40 68 23  Reporting Software
40 68 26  Online Performance Monitoring Systems Software
40 68 33  Maintenance Management Software
40 68 36  Laboratory Information System Software
40 68 39  Energy Management Software
40 68 43  Load Management Software
40 68 63  Configuration of HMI Software
40 68 66  Programming of Controller Software
40 68 93  Computer Operating Systems Software

40 69 00  Packaged Control Systems
40 69 13  Control System Simulators
40 69 23  Burner Management Systems
40 69 26  Safety Instrumented Control Systems
40 69 33  Fire and Gas Monitoring/Protection Systems for Industrial Applications

40 70 00  Instrumentation for Process Systems

40 71 00  Flow Measurement
40 71 13  Magnetic Flow Meters
40 71 13.13  Inline Magnetic Flow Meters
40 71 13.23  Insertion-Type Magnetic Flow Meters
40 71 23  Differential Pressure-Type Flow Meters
40 71 23.13  Venturi Flow Meters
40 71 23.16  Flow Tubes
40 71 23.19  Flow Nozzle-Type Flow Meters
40 71 23.23  Orifice Plate Flow Meters
40 71 23.26  Integral Orifice Flow Meters
40 71 23.29  Orifice Meter Runs
40 71 23.33  Elbow Flow Meters
40 71 23.36  Pitot Tube and Averaging Pitot Flow Meters
40 71 23.39  V-Cone Flow Meters
40 71 23.43  Differential Pressure-Type Flow Transmitters
40 71 23.46  Flow Computers
40 71 33  Propeller Flow Meters
40 71 36  Turbine Flow Meters
40 71 43  Variable Area Flow Meters
40 71 46  Target Flow Meters
40 71 49  Vortex-Shedding Flow Meters
40 71 53  Positive Displacement Flow Meters
40 71 63  Doppler Flow Meters
40 71 66  Transit Time Flow Meters
40 71 69  Open Channel Flow Meters
40 71 73  Coriolis Flow Meters
40 71 76  Thermal Flow Meters
40 71 79  Flow Switches
40 71 83  Sight Flow Indicators
40 71 86  Flow Metering Weirs

40 72 00  Level Measurement
40 72 13  Ultrasonic Level Meters (Continuous and Point-Type)
40 72 23 Radar Level Meters
40 72 26 Laser Level Meters
40 72 29 Nuclear Level Meters
40 72 33 Capacitance Type Level Meters (Continuous and Point Type)
40 72 36 RF Admittance Level Meters (Continuous and Point Type)
40 72 43 Pressure and Differential Pressure Type Level Meters
40 72 46 Bubbler Systems
40 72 53 Magnetic and Magnetostrictive Level Meters
40 72 63 Displacement-Type Level Meters
40 72 73 Sight Level Gauges
40 72 76 Level Switches
40 72 83 Leak Detection Systems

40 73 00 Pressure, Strain, and Force Measurement
40 73 13 Pressure and Differential Pressure Gauges
40 73 16 Manometers
40 73 23 Absolute-Pressure Transmitters
40 73 26 Gauge-Pressure Transmitters
40 73 29 Differential Pressure Transmitters
40 73 33 Multi-Variable Pressure/Temperature Transmitters
40 73 36 Pressure and Differential Pressure Switches
40 73 43 Force Measurement Devices
40 73 46 Load Cells
40 73 53 Torque Measurement Devices
40 73 63 Diaphragm Seals

40 74 00 Temperature Measurement
40 74 13 Resistance Temperature Devices
40 74 16 Thermocouples
40 74 23 Radiation Pyrometers
40 74 33 Thermistors
40 74 36 Diode Temperature Measurement Devices
40 74 43 Bimetallic Thermometers
40 74 46 Fluid Expansion Thermometers
40 74 49 Change-of-State Temperature Measurement Devices
40 74 53 Cryogenic Temperature Sensors
40 74 63 Temperature Transmitters
40 74 66 Temperature Switches
40 74 69 Thermowells, Protection Tubes, and Test Thermowells

40 75 00 Process Liquid Analytical Measurement
40 75 05 Multi-Parameter Analyzer Systems
40 75 13 pH/ORP Analyzers
40 75 16 Conductivity Analyzers
40 75 19 Moisture Analyzers
40 75 21 Chlorine Analyzers
40 75 21.13 Free-Chlorine Analyzers
40 75 21.23 Residual-Chlorine Analyzers
40 75 23 Chlorine Dioxide Analyzer
40 75 26 Dissolved Chlorine Dioxide Analyzers
40 75 29 Dissolved Ammonia Analyzers
40 75 33 Fluoride Analyzers
40 75 43 Dissolved Oxygen Analyzers
40 75 46  Dissolved Ozone Analyzers
40 75 53  Turbidity Analyzers
40 75 56  Suspended Solids/Sludge Density Analyzers
40 75 59  Liquid Density Analyzers
40 75 63  Monochloramine Analyzers
40 75 66  Nitrogen Analyzers
40 75 69  Phosphorous Analyzers
40 75 73  Particle Counters
40 75 76  Total Organic Carbon Analyzers
40 75 79  Total Organics Analyzers
40 75 83  Hardness Analyzers
40 75 86  Alkalinity Analyzer

40 76 00  Process Gas Analytical Measurement
40 76 05  Continuous Emissions Monitoring Systems
40 76 13  Oxygen Gas Analyzers
40 76 16  Ozone Analyzers
40 76 23  Combustible Gas Monitors
40 76 26  Chlorine Gas Analyzers
40 76 29  Ammonia Gas Analyzers
40 76 33  Hydrogen Sulfide Monitors
40 76 36  Sulfur Dioxide Analyzers
40 76 39  Carbon Dioxide Analyzers
40 76 43  Carbon Monoxide Analyzers
40 76 53  Dewpoint/Moisture Analyzers
40 76 56  Gas Density Analyzers
40 76 63  Flue Gas Analyzers
40 76 66  NO/NOX Analyzers
40 76 73  Hydrocarbon Analyzers
40 76 76  Gas Chromatograph Analyzers
40 76 79  Vapor Pressure Analyzers
40 76 83  Mass Spectrometers

40 77 00  Position and Motion Measurement
40 77 13  Acceleration Measurement Devices
40 77 16  Proximity Measurement Devices
40 77 19  Vibration Velocity Measurement Devices
40 77 23  Vibration Monitoring Systems
40 77 26  Position, Speed, and Motion Measurement Devices

40 78 00  Panel Mounted Instruments
40 78 13  Indicators and Meters
40 78 16  Indicating Lights
40 78 19  Switches and Push Buttons
40 78 23  Potentiometers and Manual Controllers
40 78 26  Chart Recorders
40 78 33  Annunciators
40 78 43  Single-Loop Controllers
40 78 53  Relays
40 78 56  Isolators, Intrinsically-Safe Barriers, and Surge Suppressors
40 78 59  Power Supplies
40 78 63  Alarm Dialers

40 79 00  Miscellaneous Instruments, Calibration Equipment,
Instrument Valves, and Fittings

40 79 13 Nuclear Mass-Measuring Scales
40 79 23 Instrument Calibration Equipment
40 79 26 Instrument Programming Equipment
40 79 33 Current-to-Pressure Converters
40 79 36 Voltage-to-Pressure Converters
40 79 39 Signal Conditioners and Converters
40 79 43 Deadweight Testers
40 79 46 Flame Scanners
40 79 63 Instrument Tubing
40 79 66 Instrument Valve Manifolds, Valves, and Fittings

40 80 00 Commissioning of Process Systems

40 90 00 Primary Control Devices

40 91 00 Primary Control Valves
40 91 13 Electrically-Operated Primary Control Valves
40 91 16 Hydraulically-Operated Primary Control Valves
40 91 19 Pneumatically-Operated Primary Control Valves
40 91 23 Solenoid Primary Control Valves
40 91 26 Specialty Primary Control Valves

40 92 00 Self-Contained Flow Controllers

40 93 00 Linear Actuators and Positioners

40 94 00 Self-Contained Pressure Regulators

40 95 00 Rotary Actuators

40 96 00 Saturable Core Reactors

40 97 00 Variable Frequency Drives

41 00 00 Material Processing and Handling Equipment

41 01 00 Operation and Maintenance of Material Processing and Handling Equipment
41 01 52 Operation and Maintenance of Bulk Materials Storage
41 01 52.13 Storage Bin and Hopper Cleaning
41 01 52.16 Silo Cleaning

41 05 00 Common Work Results for Material Processing and Handling Equipment
41 05 05 Selective Demolition for Material Processing and Handling Equipment

41 06 00 Schedules for Material Processing and Handling Equipment
41 06 10 Schedules for Bulk Material Processing Equipment
41 06 20 Schedules for Piece Material Handling Equipment
41 06 30 Schedules for Manufacturing Equipment
41 06 40 Schedules for Container Processing and Packaging
41 06 50 Schedules for Material Storage
41 06 60 Schedules for Mobile Plant Equipment

41 08 00 Commissioning of Material Processing and Handling
Equipment
41 08 10 Commissioning of Bulk Material Processing Equipment
41 08 20 Commissioning of Piece Material Handling Equipment
41 08 30 Commissioning of Manufacturing Equipment
41 08 40 Commissioning of Container Processing and Packaging
41 08 50 Commissioning of Material Storage
41 08 60 Commissioning of Mobile Plant Equipment

41 10 00 Bulk Material Processing Equipment

41 11 00 Bulk Material Sizing Equipment
41 11 13 Bulk Material Agglomerators
41 11 16 Bulk Material Air Mill Classifiers
41 11 19 Bulk Material Centrifuges
41 11 23 Bulk Material Crushers
41 11 26 Bulk Material Cyclones
41 11 29 Bulk Material Fluid Bed Separators
41 11 33 Bulk Material Grinders
41 11 36 Bulk Material Homogenizers
41 11 39 Bulk Material Lump Breakers
41 11 43 Bulk Material Mills
41 11 46 Bulk Material Pulverizers
41 11 49 Bulk Material Screens
41 11 53 Bulk Material Shredders
41 11 56 Bulk Material Sieves

41 12 00 Bulk Material Conveying Equipment
41 12 13 Bulk Material Conveyors
41 12 13.13 Airslide Bulk Material Conveyors
41 12 13.16 Auger Bulk Material Conveyors
41 12 13.19 Belt Bulk Material Conveyors
41 12 13.23 Container Bulk Material Conveyors
41 12 13.26 Drag Chain Bulk Material Conveyors
41 12 13.29 Hopper Bulk Material Conveyors
41 12 13.33 Reciprocating Bulk Material Conveyors
41 12 13.36 Screw Bulk Material Conveyors
41 12 13.39 Stacking and Reclai m Bulk Material Conveyors
41 12 13.43 Trough Bulk Material Conveyors
41 12 13.46 Tube Bulk Material Conveyors
41 12 13.49 Vibratory Bulk Material Conveyors
41 12 13.53 Weigh-Belt Bulk Material Conveyors
41 12 16 Bucket Elevators
41 12 19 Pneumatic Conveyors
41 12 19.13 Dense Phase Pneumatic Conveyors
41 12 19.16 Dilute Phase Pneumatic Conveyors

41 13 00 Bulk Material Feeders
41 13 13 Bin Activators/Live Bin Bottoms
41 13 23 Feeders
41 13 23.13 Airlock Bulk Material Feeders
41 13 23.16 Apron Bulk Material Feeders
41 13 23.19 Rotary-Valve Bulk Material Feeders
41 13 23.23 Screw Bulk Material Feeders
41 13 23.26 Vibratory Bulk Material Feeders
41 13 23.29 Volumetric Bulk Material Feeders
41 13 23.33  Weigh Bulk Material Feeders

41 14 00  **Batching Equipment**
41 14 13  Bag-Handling Batching Equipment
41 14 16  Batch Cars/Transports
41 14 19  Batch Hoppers
41 14 23  Bulk Bag-Handling Batching Equipment
41 14 26  Blenders
41 14 29  Drum-Handling Batching Equipment
41 14 33  Mixers
41 14 36  Weigh Scales

41 20 00  **Piece Material Handling Equipment**

41 21 00  **Conveyors**
41 21 13  Automatic Guided Vehicle Systems
41 21 23  Piece Material Conveyors
41 21 23.13  Belt Piece Material Conveyors
41 21 23.16  Container Piece Material Conveyors
41 21 23.19  Drag-Chain Piece Material Conveyors
41 21 23.23  Hopper Piece Material Conveyors
41 21 23.26  Monorail Piece Material Conveyors
41 21 23.29  Power and Free Piece Material Conveyors
41 21 23.33  Reciprocating Piece Material Conveyors
41 21 23.36  Roller Piece Material Conveyors
41 21 23.39  Vibratory Piece Material Conveyors
41 21 23.43  Walking-Beam Piece Material Conveyors
41 21 23.46  Weigh-Belt Piece Material Conveyors
41 21 23.53  Postal Conveyors
41 21 26  Piece Material Diverter Gates
41 21 29  Piece Material Gravity Slides
41 21 33  Piece Material Transfer Cars
41 21 36  Piece Material Turntables
41 21 39  Piece Material Feeders
41 21 39.13  Piece Material Vibratory Feeders

41 22 00  **Cranes and Hoists**
41 22 13  Cranes
41 22 13.13  Bridge Cranes
41 22 13.16  Gantry Cranes
41 22 13.19  Jib Cranes
41 22 13.23  Mobile Cranes
41 22 13.26  Tower Cranes
41 22 13.29  Specialty Cranes
41 22 23  Hoists
41 22 23.13  Fixed Hoists
41 22 23.16  Portable Hoists
41 22 23.19  Monorail Hoists
41 22 23.23  Specialty Hoists
41 22 33  Derricks

41 23 00  **Lifting Devices**
41 23 13  Clamps
41 23 16  Grabs
41 23 19  Hooks
41 23 23  Lifts
41 23 26  Slings
41 23 29  Spreader Bars/Beams
41 23 33  Tongs

41 24 00  Specialty Material Handling Equipment
   41 24 13  Aeration Devices
   41 24 16  Bin Vibrators
   41 24 19  Dehydrators
   41 24 23  Hydrators
   41 24 26  Hydraulic Power Systems
   41 24 29  Lubrication Systems
   41 24 33  Magnetic Separators
   41 24 36  Metal Detectors
   41 24 39  Railcar Movers
   41 24 43  Turnheads/Distributors
   41 24 46  Sorting Machines
   41 24 46.13 Postal Sorting Machines

41 30 00  Manufacturing Equipment

41 31 00  Manufacturing Lines and Equipment
   41 31 13  Manufacturing Lines
   41 31 13.13  Assembly Lines
   41 31 13.16  Casting Lines
   41 31 13.19  Coating Lines
   41 31 13.23  Converting Lines
   41 31 13.26  Disassembly Lines
   41 31 13.29  Extrusion Lines
   41 31 13.33  Machining Lines
   41 31 13.36  Molding Lines
   41 31 13.39  Finishing/Painting Lines
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43 24 13 Vertically Suspended Single-Casing Discharge-through-column Centrifugal Pumps
43 24 13.13 Vertically Suspended Single-Casing Discharge-through-column Diffuser Centrifugal Pumps
43 24 13.23 Vertically Suspended Single-Casing Discharge-through-column Volute Centrifugal Pumps
43 24 13.33 Vertically Suspended Single-Casing Discharge-through-column Axial Flow Centrifugal Pumps
43 24 16 Vertically Suspended Single-casing Separate Discharge (Sump) Centrifugal Pumps
43 24 16.13 Vertically Suspended Single-Casing Separate Discharge (Sump) Line Shaft Centrifugal Pumps
43 24 16.23 Vertically Suspended Single-Casing Separate Discharge (Sump) Cantilever Centrifugal Pumps
43 24 21 Vertically Suspended Double-Casing Centrifugal Pumps
43 24 21.13 Vertically Suspended Double-Casing Diffuser Centrifugal Pumps
43 24 21.23 Vertically Suspended Double-Casing Volute Centrifugal Pumps
43 24 26 Vertically Suspended Inline Casing Diffuser Centrifugal Pumps
43 24 41 Archimedes Screw Pumps
43 24 41.13 Positive-Displacement Inclined Open Archimedes Screw-type Pumps
43 24 41.23 Positive-Displacement Inclined Closed-casing Archimedes Screw-type Pumps

43 25 00 Submersible/Immersible Liquid Pumps
43 25 13 Overhung Close-Coupled Submersible Centrifugal Pumps
43 25 13.13 Overhung Close-Coupled Submersible Diffuser Centrifugal Pumps
43 25 13.23 Overhung Close-Coupled Submersible Volute Centrifugal Pumps
43 25 50 Positive Displacement Submersible Liquid Pumps

43 26 00 **Specialized Liquid Pumps**
43 26 13 Submersible Grinder Pumps
43 26 30 Regenerative Centrifugal Pumps
43 26 30.13 Overhung Impeller Regenerative Turbine Pumps
43 26 30.21 Overhung Impeller Single-Stage Regenerative Turbine Pumps
43 26 30.23 Overhung Impeller Two-Stage Regenerative Turbine Pumps
43 26 30.26 Between-Bearings Impeller Regenerative Turbine Pumps
43 26 30.27 Between-Bearings Impeller Single-Stage Regenerative Turbine Pumps
43 26 30.29 Between-Bearings Impeller Two-Stage Regenerative Turbine Pumps
43 26 40 Regenerative Turbine Pumps
43 26 60 Regenerative Vacuum Pumps
43 26 70 Rotating-Case Pumps

43 27 00 **Process Liquid Filters**
43 27 13 Cyclonic Liquid Filters
43 27 16 Centrifugal Horizontal Pressure Leaf Liquid Filters
43 27 19 Press Liquid Filters
43 27 23 Liquid Bag Filters
43 27 33 Mechanically Cleaned Liquid Filters
43 27 43 Tubular Backwashing Liquid Filters
43 27 53 Vacuum Belt Liquid Filters
43 27 63 Woven Media Liquid Filters
43 27 63.13 Disc Liquid Filters
43 27 63.23 Rotating Drum Liquid Filters
43 27 63.33 Layer Liquid Filters
43 27 63.43 Candle Liquid Filters
43 27 63.53 Vertical Leaf Liquid Filters
43 27 73 Nonwoven Media Liquid Filters
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43 27 73.23 Depth Liquid Filters

43 30 00 **Gas and Liquid Purification Equipment**

43 31 00 **Gas and Liquid Purification Filtration Equipment**
43 31 13 Gas and Liquid Purification Filters
43 31 13.13 Activated Carbon-Gas and Liquid Purification Filters
43 31 13.16 Gas and Liquid Purification Filter Presses
43 31 13.19 High-Purity Cartridge Gas and Liquid Purification Filters
43 31 13.23 Membrane Diaphragm Gas and Liquid Purification Filters
43 31 13.26 Multimedia Gas and Liquid Purification Filters
43 31 13.29 Pretreatment Cartridge Gas and Liquid Purification Filters
43 31 13.33 Ultrafilter Units

43 32 00 **Gas and Liquid Purification Process Equipment**
43 32 13 Gas and Liquid Purification Process Beds
43 32 13.13 Anion-Gas and Liquid Purification Process Beds
43 32 13.16 Cation-Gas and Liquid Purification Process Beds
43 32 23 Gas and Liquid Purification Process Clarifier Systems
43 32 26 Gas and Liquid Purification Decarbonators
43 32 29 Electronic Deionization Purification Units
43 32 33 External Regeneration Systems
43 32 36 Mixed-Bed Ion-Exchange Vessels
43 32 39  Gas and Liquid Purification Mixed Beds
43 32 39.13 Externally Regenerable Gas and Liquid Purification Mixed Beds
43 32 39.16 In-Situ Regenerable Gas and Liquid Purification Mixed Beds
43 32 53  Packed-Bed Ion-Exchange Vessels
43 32 56  Reverse-Osmosis Purification Units
43 32 59  Gas and Liquid Purification Scrubbers
43 32 63  Ultraviolet Sterilizers
43 32 66  Vacuum Degasifiers
43 32 69  Chemical Feed Systems
43 32 73  Ozonation Equipment
43 32 76  Chlorination Equipment

43 40 00  Gas and Liquid Storage

43 41 00  Non-pressurized Tanks and Vessels
43 41 11  Bolted Steel Tanks
43 41 13  Welded Steel Tanks
43 41 13.13 Glass-lined Welded Steel Tanks
43 41 13.23 Rubber-lined Welded Steel Tanks
43 41 13.33 Epoxy-lined Welded Steel Tanks
43 41 13.43 Ceramic-lined Welded Steel Tanks
43 41 23  Stainless Steel Tanks
43 41 26  Aluminum Tanks
43 41 31  Metallic Specialty Tanks
43 41 41  Polyvinyl Chloride Tanks
43 41 43  Polyethylene Tanks
43 41 45  Fiberglass Reinforced Plastic Tanks
43 41 53  Wood Stave Tanks
43 41 63  Precast Concrete Tanks
43 41 73  Ceramic Tanks
43 41 83  Non-metallic Specialty Tanks

43 42 00  Pressurized Tanks and Vessels
43 42 11  Cast Iron Pressure Tanks
43 42 13  Ductile Iron Pressure Tanks
43 42 21  Welded Steel Pressure Tanks
43 42 23  Glass-lined Steel Pressure Tanks
43 42 26  Welded Steel Gas Storage Sphere
43 42 33  Stainless Steel Pressure Tanks
43 42 36  Aluminum Pressure Tanks
43 42 41  Metallic Specialty Pressure Tanks
43 42 53  Fiberglass Reinforced Plastic Pressure Tanks
43 42 83  Non-metallic Specialty Pressure Tanks

44 00 00  Pollution and Waste Control Equipment

44 01 00  Operation and Maintenance of Pollution and Waste Control Equipment
44 01 10  Operation and Maintenance of Air Pollution Control
44 01 20  Operation and Maintenance of Noise Pollution Control
44 01 30  Operation and Maintenance of Odor Control Equipment
44 01 40  Operation and Maintenance of Water Pollution Control Equipment
44 01 50 Operation and Maintenance of Solid Waste Control and Reuse
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**44 11 00 Particulate Control Equipment**

44 11 13 Fugitive Dust Control
44 11 16 Fugitive Dust Barrier Systems
44 11 19 Atmospheric Air Quality Monitoring Equipment
44 11 20 Gravitational Separators
44 11 31 Venturi Scrubbing Equipment
44 11 33 Spray Tower/Chamber Scrubbing Equipment
44 11 36 Cyclone Scrubbing Equipment
44 11 51 Pulse Jet Fabric Filtration Equipment
44 11 53 Reverse Flow Fabric Filtration Equipment
44 11 54 Shake/Deflate Fabric Filtration Equipment
44 11 56 Cartridge Filtration Equipment
44 11 59 Disposable Dry Filtration Equipment
44 11 71 Cyclone Dust Collection Equipment
44 11 73 Multicyclone Dust Collection Equipment
44 11 76 Mist Elimination Equipment
44 11 93 Wet Electrostatic Precipitator Equipment
44 11 96 Dry Plate Electrostatic Precipitator Equipment

**44 13 00 Gaseous Air Pollution Control Equipment**

44 13 11 Spray Tower/Chamber Absorption Equipment
44 13 13 Packed Tower/Chamber Absorption Equipment
44 13 14 Tray Tower Absorption Equipment
44 13 16 Jet Bubbling Reactor Equipment
44 13 17 Venturi Absorption Equipment
44 13 20 Vacuum Extraction Systems
44 13 31 Powdered Injection Adsorption Equipment
44 13 33 Fluidized Bed Adsorption Equipment
44 13 34  Fixed Bed Adsorption Equipment
44 13 36  Rotary Bed Adsorption Equipment
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44 13 51  Thermal Oxidation Equipment
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44 13 59  Claus Sulfur Recovery Equipment
44 13 71  Thermal Reduction Equipment
44 13 73  Catalytic Reduction Equipment
44 13 76  Non-catalytic Reduction Equipment
44 13 77  Selective Non-catalytic Reduction Equipment
44 13 81  Condensation Systems
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44 13 91  Biofilter Media
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44 20 00  Noise Pollution Control
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44 21 16  Flexible Noise Abatement Barriers
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44 41 21  Containment Booms
44 41 23  Marine Spill Accessories
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44 41 32 Drum Containment Units
44 41 33 Containment Pallets
44 41 34 Prefabricated Spill Containment Curbing
44 41 36 Prefabricated Spill Containment Berms
44 41 37 Prefabricated Berms for Tank Containment
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44 53 43 Ferrous Metals Separation Equipment
44 53 44 Eddy Current Separators
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44 53 49 Ballistic Separators
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44 55 13 Compost Screening Equipment
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46 21 13 Chain-and-Rake Bar Screens
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46 21 17 Catenary Bar Screens
46 21 19 Continuous Belt Screens
46 21 23 Cylindrical Bar Screens
46 21 26 Step Screens
46 21 33 Rotary Drum Screens
46 21 39 Spiral Screens
46 21 43 Band Screens
46 21 46 Disc Screens
46 21 51 Traveling Water Screens
46 21 53 Perforated Plate Screens
46 21 56 Wedge Wire Screens
46 21 57 Element Screens
46 21 71 Trash Raking Equipment
46 21 73 Screenings Washing and Compacting Equipment
46 21 76 Vacuum Screenings Conveying Equipment
46 21 79 Screenings Storage Containers
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46 23 00 Grit Removal and Handling Equipment
46 23 13 Chain-and-Bucket Grit Removal Equipment
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46 23 23 Vortex Grit Removal Equipment
46 23 27 Cyclone Degritters
46 23 33 Aerated Grit Removal Equipment
46 23 43 Inline Baffled Grit Removal Equipment
| 46 23 53 | Traveling Bridge Grit Removal Equipment |
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| 46 24 16 | Comminutors |
| 46 24 23 | Inline Grinders |
| 46 24 33 | Open-channel Grinders |
| 46 24 36 | Modular Grinding-Screening-Compacting Equipment |
| **46 25 00** | **Oil and Grease Separation and Removal Equipment** |
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| 46 25 16 | API Oil-Water Separators |
| 46 25 23 | Grease Traps |
| 46 25 33 | Dissolved Air Flotation Grease and Oil Separation Equipment |
| 46 25 41 | Helical Scum Skimming and Removal Equipment |
| 46 25 43 | Tipping Trough Scum Skimming and Removal Equipment |
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| 46 31 13 | Sulfur Dioxide Gas Feed Equipment |
| 46 31 16 | Ammonia Gas Feed Equipment |
| 46 31 23 | Gas Storage, Weighing, and Leak Detection Equipment |
| 46 31 26 | Emergency Gas Treatment Systems |
| 46 31 33 | Chlorine Dioxide Reactors |
| 46 31 43 | Carbon Dioxide Gas Feed Equipment |
| 46 31 53 | Ozone Generating and Feed Equipment |
| 46 31 56 | Liquid Oxygen Storage and Feed Equipment |
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| **46 33 00** | **Liquid Chemical Feed Equipment** |
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| 46 33 46 | Progressing Cavity Metering Pumps |
| 46 33 48 | Lobe Metering Pumps |
| 46 33 53 | Drum Pumps |
| 46 33 66 | Liquid Chemical Transfer Pumps |
| 46 33 73 | Liquid Chemical Diffusers |
| 46 33 83 | Liquid Chemical Feed Accessories and Safety Equipment |
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| 46 36 13 | Storage Silos |
46 36 23  Dry Chemical Weighing Equipment
46 36 33  Volumetric Feed Equipment
46 36 36  Gravimetric Feed Equipment
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46 41 00  Mixing Equipment
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46 41 13  Inline Blender-type Rapid Mixers
46 41 16  Induction-type Rapid Mixing Equipment
46 41 17  Inline Static Mixers
46 41 21  Jet Mixing Equipment
46 41 23  Submersible Mixers
46 41 26  Floating Mechanical Mixers
46 41 27  Paddle Mixers
46 41 29  Pin Mixers
46 41 31  Vertical Reel Flocculation Equipment
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46 41 36  Walking-beam Flocculation Equipment
46 41 38  Horizontal Oscillating Flocculation Equipment
46 41 41  Top-entering Tank Mixers
46 41 43  Side-entry Tank Mixers
46 41 46  Portable Tank Mixers

46 43 00  Clarifier Equipment
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46 43 14  Traveling Bridge Clarifier Equipment
46 43 16  Differential Head Clarifier Equipment
46 43 18  Oscillating Scraper-type Clarifier Equipment
46 43 21  Circular Clarifier Equipment
46 43 53  Solids Contact Clarifier Equipment
46 43 61  Floculating Clarifier, Pulsating Sludge Blanket Type
46 43 63  Dissolved Air Flotation Equipment for Water Treatment
46 43 66  Ballasted High-rate Clarifier Equipment
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46 46 00  Sediment Removal Equipment
46 46 13  Tipping Sediment Flushing Tanks
46 46 16  Flushing Gates
46 46 23  Water Cannon
46 46 26  Nozzle Systems

46 50 00  Water and Wastewater Secondary Treatment Equipment

46 51 00  Air and Gas Diffusion Equipment
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46 51 13  Floating Mechanical Aerators
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46 51 17  Jet Aeration Equipment
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46 51 43  Floating Membrane Diffusers
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46 53 00  **Biological Treatment Systems**
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46 61 19  Wash Water Troughs
46 61 21  Pressure Filters
46 61 23  Gravity Filters
46 61 26  High-rate Sand Filters
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46 61 41  Disc Cloth Filters
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46 61 46  Automatic Backwash Cloth Filter Equipment
46 61 53  Cartridge Filters
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46 61 73  Automatic Straining Equipment
46 63 00  **Demineralization Equipment**
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46 66 00  Ultraviolet Equipment
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46 66 23  Closed-vessel Medium-pressure Ultraviolet Treatment Equipment
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46 66 56  Open-channel Low-pressure/High-intensity Ultraviolet Treatment Equipment
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46 70 00  Water and Wastewater Residuals Handling and Treatment

46 71 00  Residuals Thickening Equipment
46 71 13  Circular Gravity Thickeners
46 71 16  Gravity Belt Thickeners
46 71 23  Dissolved Air Flotation Thickening Equipment
46 71 33  Rotary Drum Thickening Equipment
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46 71 43  Disc Thickeners
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46 73 00  Residuals Stabilization
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46 73 24  Autothermal Thermophilic Aerobic Digestion Equipment
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| 46 76 00 | Residuals Dewatering Equipment |
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| 46 76 21 | Belt Filter Presses |
| 46 76 23 | Plate-and-Frame Filter Presses |
| 46 76 26 | Rotary Presses |
| 46 76 27 | Screw Presses |
| 46 76 33 | Dewatering Centrifuges |
| 46 76 53 | Belt Dryers |
| 46 76 60 | Direct-heat Residuals Drying Equipment |
| 46 76 70 | Indirect-heat Residuals Drying Equipment |

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| 46 78 23 | Fluidized-bed Sludge Incinerators |
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| 46 78 41 | Regenerative Thermal Oxidizers |
| 46 78 46 | Recuperative Air Preheating Equipment |
| 46 78 47 | Waste Heat Recovery Boilers |
| 46 78 49 | Waste Heat Recovery Heat Exchangers |
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