

# Asset Standardization Guide for CMMS

*Stop Fighting Duplicates, Messy Hierarchies, and Inconsistent Data*

AssetStage

## Asset Standardization Guide for CMMS

**Stop Fighting Duplicates, Messy Hierarchies, and Inconsistent Data**

---

### The Real Cost of Naming Chaos

Before we get into solutions, let's quantify the problem.

#### The Math Nobody Does

**Scenario:** PM optimization project across 5,000 pumps

Situation	Time Required	Cost @ £75/hr
<b>With standardization</b>		
Filter by pump type	5 minutes	-
Apply PM template	30 minutes	-
Review and adjust	4 hours	-
<b>Total</b>	<b>~5 hours</b>	<b>£375</b>

#### Without standardization

Export to Excel	30 minutes	-
Manually classify 47 naming variations	40 hours	-
Build lookup table	8 hours	-
Verify classifications	16 hours	-
Apply PM templates one-by-one	24 hours	-
<b>Total</b>	<b>~90 hours</b>	<b>£6,750</b>

## Cost of naming chaos on ONE project: £6,375

Now multiply by every report, every migration, every consultant engagement, every new site onboarding.

## What Bad Data Actually Looks Like

Export your asset register. Filter by “pump.” You’ll find:

Pump	↳ What type?
PUMP	↳ Same thing, different case
Centrifugal Pump	↳ Good start
Cent. Pump	↳ Abbreviated
Centrif Pump	↳ Different abbreviation
CP	↳ Cryptic
Pump, Centrifugal	↳ Comma-first format
Pump - Centrifugal	↳ Dash format
Centrifugal pump (Grundfos)	↳ Manufacturer in name
Grundfos Pump	↳ Manufacturer only
Process Pump	↳ Application, not type
Transfer Pump	↳ Also application
Pump_01	↳ Sequence number
P-101	↳ Tag number, not description
CW Pump	↳ System abbreviation
Seawater Lift Pump	↳ Full description

16 variations. Same asset type. Zero ability to query “all centrifugal pumps.”

---

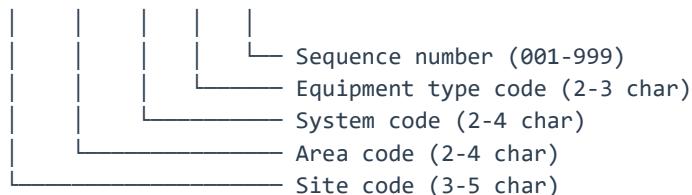
## The Naming Convention Framework

Every asset name should follow a consistent structure.

### Structure 1: Tag-Based (Most Common)

[SITE]-[AREA]-[SYSTEM]-[TYPE]-[SEQUENCE]

Example: PLT1-UTIL-CW-PP-001

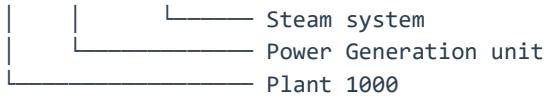


### Structure 2: Functional Location Based

[FUNCTIONAL\_LOCATION]-[TYPE]-[SEQUENCE]

Example: 1000-PWRGEN-STM-PP-001

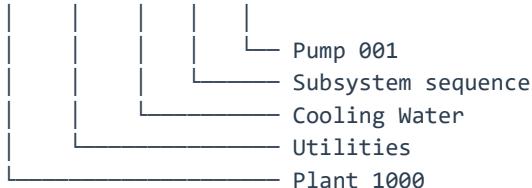




### Structure 3: Hybrid (SAP Style)

[PLANT]-[FUNCTIONAL\_LOC]-[EQUIPMENT]

Example: 1000-UTIL-CW-010-PP001



**Key rule:** Pick ONE structure. Document it. Enforce it everywhere.

---

## Equipment Type Codes (Complete Reference)

Use these codes in your asset names and class fields.

### Rotating Equipment

Code	Equipment Type	Alt Codes	Notes
PP	Pump	PU, P	Use subtype suffix if needed (PP-CF, PP-RCP)
PP-CF	Pump, Centrifugal		Horizontal and vertical
PP-RCP	Pump, Reciprocating		Plunger, piston, diaphragm
PP-ROT	Pump, Rotary		Gear, screw, lobe, vane
PP-SUB	Pump, Submersible		
CP	Compressor	CO, C	
CP-CF	Compressor, Centrifugal		
CP-RCP	Compressor, Reciprocating		
CP-SCR	Compressor, Screw		
MO	Motor, Electric	EM, M	
MO-AC	Motor, AC		Induction, synchronous
MO-DC	Motor, DC		
GB	Gearbox	GR	

Code	Equipment Type	Alt Codes	Notes
FN	Fan	FA	Axial, centrifugal
BL	Blower	BW	
TB	Turbine	TU	Gas, steam, hydro
TB-GAS	Turbine, Gas	GT	
TB-STM	Turbine, Steam	ST	
GN	Generator	GE	
AG	Agitator/Mixer	MX	

### Static Equipment

Code	Equipment Type	Alt Codes	Notes
VE	Vessel, Pressure	PV	
TK	Tank	TA	Atmospheric storage
TK-ATM	Tank, Atmospheric		
TK-PRES	Tank, Pressurized		
CL	Column/Tower	TW	Distillation, absorption
HX	Heat Exchanger	HE	
HX-ST	Heat Exchanger, Shell & Tube		
HX-PL	Heat Exchanger, Plate		
HX-AC	Heat Exchanger, Air Cooled		Fin-fan
FT	Filter	FL	
ST	Strainer	SR	
DR	Dryer	DY	
EJ	Ejector		Steam jet
SP	Separator	SE	

### Valves

Code	Equipment Type	Alt Codes	Notes

Code	Equipment Type	Alt Codes	Notes
VV	Valve (generic)	VA, V	Avoid - use specific type
VV-GT	Valve, Gate		
VV-GL	Valve, Globe		
VV-BL	Valve, Ball		
VV-BF	Valve, Butterfly		
VV-CK	Valve, Check		Swing, lift, dual plate
VV-CV	Valve, Control	CV	Includes actuator/positioner
VV-SV	Valve, Safety/Relief	SV, RV, PSV	
VV-SD	Valve, Shutdown	SDV	ESD/PSD valves
VV-BV	Valve, Blowdown		
VV-DV	Valve, Drain		

## Piping & Structures

Code	Equipment Type	Alt Codes	Notes
PI	Piping	PL	Line number, not equipment
FL	Flange		Track only if critical
SP	Spool Piece		
EX	Expansion Joint		Bellows, slip
ST	Structure		Pipe racks, platforms

## Electrical

Code	Equipment Type	Alt Codes	Notes
TR	Transformer	TX, XF	Power, instrument
SW	Switchgear	SG	MV, LV
CB	Circuit Breaker		Often part of switchgear
MC	Motor Control Center	MCC	
VF	Variable Frequency Drive	VFD, VSD	

Code	Equipment Type	Alt Codes	Notes
UP	UPS		
BT	Battery	BA	
CH	Charger, Battery	BC	
CA	Cable		Usually not tracked individually
PD	Panel, Distribution	DB	
LT	Lighting		
GR	Grounding		

## Instrumentation

Code	Equipment Type	Alt Codes	Notes
FT	Flow Transmitter		
PT	Pressure Transmitter		
TT	Temperature Transmitter		
LT	Level Transmitter		
AT	Analyzer/Analyzer Transmitter		
FE	Flow Element		Orifice, venturi
TE	Temperature Element		RTD, thermocouple
PE	Pressure Element		Gauge
FI	Flow Indicator		Local
PI	Pressure Indicator		Local gauge
TI	Temperature Indicator		Local
LI	Level Indicator		Sight glass
FC	Flow Controller		
PC	Pressure Controller		
TC	Temperature Controller		
LC	Level Controller		
PLC	Programmable Logic Controller		

Code	Equipment Type	Alt Codes	Notes
DCS	Distributed Control System		

## Material Handling

Code	Equipment Type	Alt Codes	Notes
CV	Conveyor	CN	Belt, screw, chain
CR	Crane		Overhead, mobile, jib
HO	Hoist		Chain, wire rope
EL	Elevator/Lift		Personnel, freight
FO	Forklift		Usually not in CMMS
LD	Loader		

## HVAC

Code	Equipment Type	Alt Codes	Notes
AH	Air Handling Unit	AHU	
AC	Air Conditioner		Package, split
CH	Chiller		
CT	Cooling Tower		
BL	Boiler		Steam, hot water
DH	Dehumidifier		
HU	Humidifier		
EF	Exhaust Fan		
DU	Ductwork		Usually not tracked

---

## Asset Descriptions: Good vs Bad

The description field should be STANDARDIZED and SEARCHABLE.

### Description Formula

[Equipment Type], [Configuration/Subtype], [Key Spec]

### Examples:

- Centrifugal Pump, Horizontal, 50HP
- Electric Motor, TEFC, 37kW
- Control Valve, Globe, 4" 300#
- Heat Exchanger, Shell & Tube, 500kW
- Transformer, Dry Type, 1000kVA

### Before & After Examples

BAD (Don't Use)	GOOD (Use This)	Why
Pump	Centrifugal Pump, Horizontal, 50HP	Specific, searchable
P-101	Centrifugal Pump, Horizontal, 50HP	Tag ≠ description
Grundfos Pump	Centrifugal Pump, Horizontal, 50HP	Manufacturer goes in MFR field
Cooling Water Pump	Centrifugal Pump, Horizontal, 50HP	System goes in hierarchy
Main Pump	Centrifugal Pump, Horizontal, 50HP	“Main” is meaningless
Pump 1	Centrifugal Pump, Horizontal, 50HP	Sequence in tag, not description
Motor	Electric Motor, TEFC, 37kW	Specify type and rating
37kW Motor	Electric Motor, TEFC, 37kW	Format consistently
WEG Motor	Electric Motor, TEFC, 37kW	Manufacturer in MFR field
Pump Motor	Electric Motor, TEFC, 37kW	Driven equipment in

BAD (Don't Use)	GOOD (Use This)	Why
Big Valve	Ball Valve, Full Port, 6" 150#	Specify type, size, class
V-2301	Gate Valve, 8" 300#, CS	Tag ≠ description
Control Valve	Control Valve, Globe, 3", Equal %	Include size and characteristic

---

## Attribute Templates by Equipment Class

Every equipment class needs a template defining:

- Required attributes (must fill)
- Optional attributes (fill if known)
- Format/allowed values
- Examples

### Template: Centrifugal Pump

Attribute	Required	Format	Allowed Values	Example
Asset ID	Yes	[SITE]-[SYS]- PP-[###]	Per naming convention	PLT1-CW-PP- 001
Description	Yes	[Type] Pump, [Config], [Power]	Standardized format	Centrifugal Pump, Horizontal, 50HP
Equipment Class	Yes	ISO 14224 or internal code	1.1, PP-CF, PUMP-CENT	1.1
Manufacturer	Yes	Dropdown	Approved vendor list	Grundfos
Model Number	Yes	Free text	-	CR 32-2-2

Attribute	Required	Format	Allowed Values	Example
Serial Number	Yes	Free text	-	2024-ABC-12345
Criticality	Yes	Dropdown	A, B, C	B
Safety Class	Yes	Dropdown	Safety-Critical, Non-Safety	Non-Safety
Installation Date	Yes	YYYY-MM-DD	Valid date	2019-03-15
Design Flow Rate	Yes	Number + unit	m³/h, GPM	150 m³/h
Design Head	Yes	Number + unit	m, ft, bar	45 m
Design Pressure	Yes	Number + unit	bar, psi	10 bar
Motor Power	Yes	Number + unit	kW, HP	37 kW
RPM	Yes	Number	-	2950
Impeller Diameter	Opt	Number + unit	mm, in	215 mm
Seal Type	Yes	Dropdown	Single Mech, Double Mech, Packed	Mechanical - Double
API Plan	Opt	Dropdown	Plan 11, 13, 21, 23, 32, 52, 53A, 53B, 54	Plan 53B
Material - Casing	Opt	Dropdown	Cast Iron, CS, SS316, Duplex, Super Duplex	Cast Iron
Material - Impeller	Opt	Dropdown	Bronze, SS316, Duplex, Super Duplex	SS316
Coupling Type	Opt	Dropdown	Flexible, Spacer, Direct	Flexible
Parent Location	Yes	Location ID	Valid FLOC	PLT1-UTIL-CW
Driven By	Opt	Asset ID	Motor asset ID	PLT1-CW-MO-001

### Template: Electric Motor

Attribute	Required	Format	Allowed Values	Example
Asset ID	Yes	[SITE]-[SYS]-MO-[###]	Per naming convention	PLT1-CW-MO-001
Description	Yes	Electric Motor, [Enclosure], [Power]	Standardized format	Electric Motor, TEFC, 37kW
Equipment Class	Yes	Code	3.3, MO, MOTOR-ELEC	3.3
Manufacturer	Yes	Dropdown	Approved vendor list	WEG
Model Number	Yes	Free text	-	W22 315S/M
Serial Number	Yes	Free text	-	BR-2024-78901
Criticality	Yes	Dropdown	A, B, C	B
Frame Size	Yes	Text	NEMA or IEC frame	315S/M
Power Rating	Yes	Number + unit	kW, HP	37 kW
Voltage	Yes	Number + unit	V	400V
Full Load Amps	Yes	Number	A	68
RPM	Yes	Number	-	2960
Phases	Yes	Dropdown	1, 3	3
Frequency	Yes	Dropdown	50Hz, 60Hz	50Hz
Enclosure Type	Yes	Dropdown	ODP, TEFC, TENV, XP	TEFC
Insulation Class	Yes	Dropdown	B, F, H	F
Service Factor	Opt	Number	-	1.15
Efficiency Class	Opt	Dropdown	IE1, IE2, IE3, IE4	IE3
Bearing DE	Opt	Text	Part number	6316-2Z
Bearing NDE	Opt	Text	Part number	6314-2Z
Parent Location	Yes	Location ID	Valid FLOC	PLT1-UTIL-CW

Attribute	Required	Format	Allowed Values	Example
Drives	Opt	Asset ID	Driven asset ID	PLT1-CW-PP-001

### Template: Control Valve

Attribute	Required	Format	Allowed Values	Example
Asset ID	Yes	[SITE]-[SYS]-CV-[####]	Per naming convention	PLT1-CW-CV-001
Description	Yes	Control Valve, [Body Type], [Size] [Rating]	Format	Control Valve, Globe, 4" 300#
Equipment Class	Yes	Code	8.6, VV-CV, VALVE-CTRL	8.6
Manufacturer	Yes	Dropdown	Approved vendor list	Fisher
Model Number	Yes	Free text	-	ED 4" 300#
Serial Number	Yes	Free text	-	FI-2024-12345
Criticality	Yes	Dropdown	A, B, C	A
Size	Yes	Text	Nominal size	4"
Pressure Rating	Yes	Dropdown	150#, 300#, 600#, 900#, 1500#, 2500#	300#
Body Type	Yes	Dropdown	Globe, Angle, Ball, Butterfly	Globe
Cv	Yes	Number	-	150
Characteristic	Yes	Dropdown	Linear, Equal %, Quick Opening	Equal %
Material - Body	Yes	Dropdown	CS, SS316, Alloy 20, etc.	WCB
Material - Trim	Opt	Dropdown	SS316, SS317, Stellite, etc.	SS316
Actuator Type	Yes	Dropdown	Pneumatic, Electric, Hydraulic	Pneumatic - Diaphragm
Actuator Size	Opt	Number	-	40
Air Fail Action	Yes	Dropdown	Fail Open, Fail Close, Fail Last	Fail Close

Attribute	Required	Format	Allowed Values	Example
Positioner	Yes	Y/N	-	Y
Positioner Model	Opt	Text	-	DVC6200
SIS Classification	Opt	Dropdown	SIL 1, SIL 2, SIL 3, Non-SIS	Non-SIS
Parent Location	Yes	Location ID	Valid FLOC	PLT1-UTIL-CW

### Template: Heat Exchanger

Attribute	Required	Format	Allowed Values	Example
Asset ID	Yes	[SITE]-[SYS]-HX-[###]	Per naming convention	PLT1-COOL-HX-001
Description	Yes	Heat Exchanger, [Type], [Duty]	Format	Heat Exchanger, Shell & Tube, 500kW
Equipment Class	Yes	Code	5.1, HX-ST	5.1
Manufacturer	Yes	Dropdown	Approved vendor list	Alfa Laval
Model Number	Yes	Free text	-	M10-BFG
Serial Number	Yes	Free text	-	AL-2024-45678
Criticality	Yes	Dropdown	A, B, C	B
Type	Yes	Dropdown	Shell & Tube, Plate, Air Cooled, Double Pipe	Shell & Tube
Duty	Yes	Number + unit	kW, BTU/hr	500 kW
Surface Area	Yes	Number + unit	m <sup>2</sup> , ft <sup>2</sup>	50 m <sup>2</sup>
Design Pressure - Shell	Yes	Number + unit	bar, psi	10 bar
Design Pressure - Tube	Yes	Number + unit	bar, psi	16 bar
Design Temp - Shell	Yes	Number + unit	°C, °F	150°C

Attribute	Required	Format	Allowed Values	Example
Design Temp - Tube	Yes	Number + unit	°C, °F	200°C
Material - Shell	Yes	Dropdown	CS, SS304, SS316, Titanium	CS
Material - Tubes	Yes	Dropdown	CS, SS304, SS316, Cu-Ni, Titanium	SS316
TEMA Type	Opt	Text	-	AES
Number of Tubes	Opt	Number	-	200
Tube Length	Opt	Number + unit	m, ft	3 m
Number of Passes - Shell	Opt	Number	-	1
Number of Passes - Tube	Opt	Number	-	2
Parent Location	Yes	Location ID	Valid FLOC	PLT1-COOL

---

## Hierarchy Design Patterns

Choose a pattern that fits your industry and CMMS.

### Pattern 1: Location-First (Facilities/Commercial)

```

Enterprise
└── Site (Campus/Building)
    └── Area (Floor/Zone)
        └── System (HVAC, Electrical, Plumbing)
            └── Equipment
                └── Component

```

Example:

```

ACME Corp
└── HQ Building
    └── Floor 3
        └── HVAC System
            └── AHU-3-01
                └── Supply Fan
                └── Cooling Coil
                └── Filter Bank

```

**Best for:** Commercial buildings, campuses, facilities management

## Pattern 2: Process-First (Manufacturing/Process)

```

Enterprise
└── Site (Plant)
    └── Process Unit
        └── System
            └── Subsystem
                └── Equipment
                    └── Component

```

Example:

```

ACME Chemicals
└── Plant 1
    └── Distillation Unit 100
        └── Feed System
            └── Feed Preheat
                └── E-101 Feed/Effluent Exchanger
                    └── Tube Bundle
                    └── Channel Head

```

**Best for:** Refineries, chemical plants, process industries

## Pattern 3: ISO 14224 Full (Oil & Gas)

```

Industry
└── Business Category
    └── Installation
        └── Plant/Unit
            └── Section
                └── Equipment Unit
                    └── Subunit
                        └── Maintainable Item
                            └── Part

```

Example:

```

Petroleum
└── Upstream - Offshore
    └── Platform Alpha
        └── Water Injection
            └── Seawater Lift
                └── P-4501A Seawater Lift Pump
                    └── Pump Assembly
                        └── Mechanical Seal
                            └── O-Ring

```

**Best for:** Oil & gas when benchmarking with OREDA data

## Pattern 4: Hybrid (Common Compromise)

```

Site
└── Area
    └── Functional Location (System + Tag)
        └── Equipment
            └── Component

```

Example:

```

Plant 1
└ Utilities
    └ 1-UTIL-CW-010 (Cooling Water Pump Station)
        └ PP-001 Cooling Water Pump A
            └ Mechanical Seal
            └ Coupling
        └ MO-001 Pump A Motor
        └ PP-002 Cooling Water Pump B
        └ MO-002 Pump B Motor

```

**Best for:** Most industrial sites, especially SAP PM users

---

## The Standardization Crosswalk

Before you can standardize, you need to MAP your chaos.

### Step 1: Export and Count Variations

```
-- Find all unique values in asset type/class field
SELECT asset_type, COUNT(*) as count
FROM assets
GROUP BY asset_type
ORDER BY count DESC;
```

### Step 2: Build Your Crosswalk Table

Current Value	Standard Value	Count	Action	Notes
Pump	PP - Pump	234	AUTO-MAP	Generic - may need review
PUMP	PP - Pump	89	AUTO-MAP	Case variation
Centrifugal Pump	PP-CF - Pump, Centrifugal	156	AUTO-MAP	Good
Cent. Pump	PP-CF - Pump, Centrifugal	23	AUTO-MAP	Abbreviation
Centrif Pump	PP-CF - Pump, Centrifugal	12	AUTO-MAP	Abbreviation
CP	PP-CF - Pump, Centrifugal	45	VERIFY	Confirm these are centrifugal

Current Value	Standard Value	Count	Action	Notes
Pump, Centrifugal	PP-CF - Pump, Centrifugal	8	AUTO-MAP	Format variation
Pump - Centrifugal	PP-CF - Pump, Centrifugal	5	AUTO-MAP	Format variation
Grundfos Pump	PP-CF - Pump, Centrifugal	67	AUTO-MAP	Move MFR to correct field
Process Pump	MANUAL REVIEW	34	REVIEW	Need to verify pump type
Transfer Pump	MANUAL REVIEW	28	REVIEW	Need to verify pump type
CW Pump	PP-CF - Pump, Centrifugal	45	AUTO-MAP	Confirm system from hierarchy
Submersible Pump	PP-SUB - Pump, Submersible	12	AUTO-MAP	Different type
Sump Pump	PP-SUB - Pump, Submersible	8	VERIFY	May be centrifugal or submersible
P-101	MANUAL REVIEW	1	REVIEW	Tag number, not type

### Step 3: Apply Transformations

```
-- Example update query (test in staging first!)
UPDATE assets
SET asset_type_standard = 'PP-CF'
WHERE asset_type IN ('Centrifugal Pump', 'Cent. Pump', 'Centrif Pump',
'Pump, Centrifugal', 'Pump - Centrifugal');
```

## Blank Crosswalk Template

Current Value   Standard Value   Count   Action   Notes

---

## Data Quality Governance

### RACI Matrix

Activity	Data Owner	CMMS Admin	Reliability Eng	Maintenance Sup	Technician
Define naming convention	A	R	C	C	I
Approve new equipment classes	A	R	C	I	I
Create new asset records	I	C	I	R	R
Modify asset hierarchy	A	R	C	I	I
Add new failure codes	C	R	A	C	I
Review data quality	A	R	C	I	I

Activity	Data Owner	CMMS Admin	Reliability Eng	Maintenance Sup	Technician
<b>KPIs</b>					
Delete/massage duplicate assets	A	R	C	C	I
Approve vendor master additions	A	R	I	C	I

**A** = Accountable (decision maker) **R** = Responsible (does the work) **C** = Consulted (input required) **I** = Informed (kept in loop)

## Change Request Workflow

1. REQUEST
  - └ Requestor submits change request form
    - What: Describe the change
    - Why: Business justification
    - Impact: Affected assets/processes
2. ANALYSIS
  - └ CMMS Admin performs impact analysis
    - How many assets affected?
    - What reports/integrations impacted?
    - Reversibility?
3. REVIEW
  - └ Data Owner reviews and approves/rejects
    - Aligns with standards?
    - Worth the effort?
    - Timing appropriate?
4. IMPLEMENT
  - └ CMMS Admin implements change
    - In test environment first
    - Document changes made
    - Update related documentation
5. VERIFY
  - └ Requestor verifies change
    - Meets requirements?
    - No unintended consequences?
6. COMMUNICATE

- └ Notify affected users
    - What changed
    - When effective
    - What to do differently
- 

## Data Quality KPIs Dashboard

Track these metrics monthly.

### Completeness Metrics

KPI	Formula	Target	Your Current
Assets with manufacturer	Assets with MFR ÷ Total Assets × 100	>90%	_____ %
Assets with model number	Assets with Model ÷ Total Assets × 100	>85%	_____ %
Assets with serial number	Assets with S/N ÷ Total Assets × 100	>80%	_____ %
Assets with criticality	Assets with Criticality ÷ Total Assets × 100	100%	_____ %
Assets with install date	Assets with Date ÷ Total Assets × 100	>90%	_____ %
Assets with parent location	Assets with Parent ÷ Total Assets × 100	100%	_____ %

### Consistency Metrics

KPI	Formula	Target	Your Current
Naming convention compliance	Compliant Names ÷ Total Assets × 100	>95%	_____ %
Equipment class assigned	Assets with Class ÷ Total Assets × 100	100%	_____ %

KPI	Formula	Target	Your Current
Valid equipment class	Assets with Valid Class ÷ Assets with Class × 100	100%	_____%
Duplicate asset rate	Duplicate Assets ÷ Total Assets × 100	<2%	_____%
Orphan assets (no parent)	Orphans ÷ Total Assets × 100	0%	_____%

## Description Quality

KPI	Formula	Target	Your Current
Avg description length	Sum of char lengths ÷ Total Assets	>25 chars	_____ chars
Descriptions >10 chars	Long descriptions ÷ Total Assets × 100	>95%	_____%
Unique descriptions	Unique ÷ Total Assets × 100	>80%	_____%

## Audit Queries

### Find assets missing manufacturer:

```
SELECT assetnum, description, location
FROM asset
WHERE (manufacturer IS NULL OR manufacturer = '')
    AND status = 'OPERATING'
ORDER BY location;
```

### Find duplicate descriptions:

```
SELECT description, COUNT(*) as count
FROM asset
WHERE status = 'OPERATING'
GROUP BY description
HAVING COUNT(*) > 3
ORDER BY count DESC;
```

### Find naming convention violations:

-- Adjust pattern to match your convention

```
SELECT assetnum, description
FROM asset
```

```
WHERE assetnum NOT REGEXP '^[A-Z]{3,5}-[A-Z]{2,4}-[A-Z]{2}-[0-9]{3}$'
  AND status = 'OPERATING';
```

#### Find orphan assets:

```
SELECT a.assetnum, a.description
FROM asset a
LEFT JOIN locations l ON a.location = l.location
WHERE l.location IS NULL
  AND a.status = 'OPERATING';
```

#### Find equipment class variations:

```
SELECT
  UPPER(TRIM(equipment_class)) AS normalized_class,
  COUNT(*) AS count,
  GROUP_CONCAT(DISTINCT equipment_class) AS variations
FROM asset
GROUP BY UPPER(TRIM(equipment_class))
HAVING COUNT(DISTINCT equipment_class) > 1
ORDER BY count DESC;
```

---

## 90-Day Implementation Roadmap

### Days 1-30: Assess & Define

#### Week 1: Data Discovery

- Export complete asset register to Excel
- Count unique values in: asset type, class, manufacturer, description
- Identify top 20 equipment classes by count
- Document current naming patterns (or lack thereof)
- Count duplicates (same serial number, same location+type)

#### Week 2: Gap Analysis

- Choose target standard (ISO 14224, KKS, or custom)
- Compare current classes to target classes
- Identify required attributes per class (from templates above)
- Calculate completeness % for each required attribute
- Prioritize gaps by impact and effort

#### Week 3: Standards Definition

- Draft naming convention document
- Draft equipment class list with definitions
- Draft attribute templates for top 10 equipment classes
- Draft description format rules
- Create good/bad examples

#### **Week 4: Stakeholder Alignment**

- Present standards to maintenance leadership
- Present to reliability engineering
- Present to CMMS administrators
- Incorporate feedback
- Get formal sign-off

#### **Days 31-60: Build & Map**

##### **Week 5-6: Crosswalk Development**

- Build crosswalk for asset type/class variations
- Build crosswalk for manufacturer name variations
- Build crosswalk for description standardization
- Build crosswalk for location hierarchy mapping
- Identify records requiring manual review

##### **Week 7: Staging Environment**

- Set up staging environment (AssetStage or test CMMS)
- Configure validation rules
- Load asset data into staging
- Run automated transformations
- Generate exception reports

##### **Week 8: Pilot & Refine**

- Select pilot area (500-1000 assets)

- Apply all transformations to pilot
- Review results with SMEs
- Adjust crosswalks based on findings
- Document lessons learned

## Days 61-90: Implement & Enforce

### Week 9-10: Full Transformation

- Apply transformations to remaining assets
- Complete manual review items
- Validate parent-child relationships
- Verify no orphan assets
- Run full data quality report

### Week 11: Go-Live

- Load standardized data to production CMMS
- Verify data integrity post-load
- Configure CMMS validation rules (dropdowns, required fields)
- Update user documentation
- Train users on new standards

### Week 12: Sustain

- Set up data quality dashboard
  - Schedule monthly data quality reviews
  - Establish change request process
  - Assign data stewards per area
  - Plan quarterly standards review
-

## Quick Reference Card

### Naming Convention

[SITE]-[AREA]-[SYSTEM]-[TYPE]-[SEQ]

Example: PLT1-UTIL-CW-PP-001

### Top Equipment Codes

Code	Type	Code	Type
PP	Pump	VV	Valve
MO	Motor	HX	Heat Exchanger
CP	Compressor	TK	Tank
GB	Gearbox	VE	Vessel
FN	Fan	TR	Transformer
BL	Blower	SW	Switchgear

### Description Format

[Equipment Type], [Configuration], [Key Spec]

Example: Centrifugal Pump, Horizontal, 50HP

### Required Attributes (All Classes)

- Manufacturer
- Model Number
- Serial Number
- Criticality (A/B/C)
- Installation Date
- Parent Location

### Data Quality Contacts

- Data Owner: \_\_\_\_\_
  - CMMS Admin: \_\_\_\_\_
  - Questions: \_\_\_\_\_
-

## Self-Assessment: Are You Ready?

Score yourself 0-2 on each item (0=No, 1=Partial, 2=Yes)

Item	Score
We have a documented naming convention	/2
The naming convention is enforced in CMMS	/2
We have defined equipment classes	/2
Equipment classes are consistently applied	/2
We have attribute templates per class	/2
Required attributes are enforced	/2
We have a data quality owner	/2
We measure data quality KPIs	/2
We have a change control process	/2
We review data quality monthly	/2
<b>TOTAL</b>	<b>/20</b>

### Scoring:

- 16-20: Excellent - focus on continuous improvement
- 11-15: Good foundation - close the gaps
- 6-10: Significant work needed - start with standards
- 0-5: Major overhaul required - get help

---

*Need help standardizing your asset data? AssetStage provides data staging, validation, and clean import to any CMMS platform. Contact us at [sales@assetstage.io](mailto:sales@assetstage.io)*

---

© 2026 AssetStage. This guide may be freely distributed with attribution.