Cleaning Procedures & Equipment Preservation for HULK STPE®

Why Cleaning is Critical

Hulk STPE® is a single-component moisture-cure STPE membrane that begins reacting when exposed to atmospheric moisture and humidity.

Unlike many waterborne coatings, cured material inside pumps, hoses, manifolds, guns, filters, lower packings can permanently damage equipment if not cleaned properly and immediately after use.

Proper cleaning procedures are essential to:

- Maximize equipment lifespan
- Reduce downtime
- Prevent lower pump seizure
- Maintain spray performance
- Avoid costly hose and pump replacement

General Cleaning Principles

Never Use Water

Do not introduce:

- Water
- Alcohol/water blends
- Waterborne cleaners
- Damp rags
- Compressed air with moisture into the fluid path.

Moisture exposure can initiate curing inside the system.

Clean Immediately After Use

Do not allow Hulk STPE® to:
Remain stagnant in hoses
Sit overnight in the pump
Cure inside guns or manifolds

Even partial curing can:

- Plug filters
- Damage packings
- Score cylinders
- Lock inlet/outlet balls
- Cause catastrophic lower failure

Use Only Water-Free Solvents

Recommended:

- Xylene (preferred)
- Water-free aromatic solvents
- Manufacturer-approved urethane/STPE cleaners

As referenced in Hulk STPE® product literature:
“Use alcohol or water-free solvents (e.g., xylene) before hardening.”

Avoid:

- Recycled contaminated solvent
- Water-contaminated solvent
- Ketones unless verified compatible
- Lacquer thinner blends containing moisture

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Recommended Daily Cleaning Procedure



Lower pump disassembly for inspection | Cleaning filters and removing any buildup | Cleaning spray tip and gun components | Flushing system with xylene (water-free solvent) | Replacing packings and wet cup lubrication | Lubricating throat seal and preparing for storage

Step 1 - Relieve System Pressure

Before cleaning:

1. Shut down pump
2. Engage trigger lock
3. Relieve line pressure fully
4. Remove spray tip
5. Verify no residual pressure remains

This prevents:

- Accidental injection injuries
- Sudden discharge during flushing

Step 2 - Remove Material From Supply

Pail Systems

- Remove suction tube from material pail
- Wipe exterior immediately

Drum Systems

- Remove follower plate
- Seal drum immediately to reduce moisture exposure

Important:

Do not leave intake assemblies exposed to humid air unnecessarily.

Step 3 - Initial Solvent Flush

Place intake into clean solvent.

Circulate solvent at:

- LOW pressure initially
- Moderate flow rate

Do NOT immediately run at full pressure.

Purpose:

- Soften uncured material
- Prevent pressure spikes
- Avoid forcing partially cured material deeper into packings

Continue flushing until:

- Bulk material is removed
- Solvent begins flowing consistently

Step 4 - Remove Filters & Gun Components

Disassemble and clean:

- Gun filter
- Manifold filter
- Inlet strainer
- Tip housing
- Spray tip
- Whip hose filter (if equipped)

Step 5 - Secondary High-Flow Flush

After major build up is removed:

- Increase circulation flow
- Continue flushing with clean solvent

Flush until:

- Solvent exits clear
- No stringing or gel particles appear
- Pressure stabilizes

Step 6 - Protect Pump For Storage

After flushing:

- Leave compatible storage solvent in lower section
- Lubricate wet cup
- Install desiccant breather if equipped
- Seal intake assembly

Never store equipment:

- Dry with cured residue
- Open to atmosphere

HULK SYSTEMS

Long-Term Storage Procedure

If equipment is sitting for:

- More than 48–72 hours
- Seasonal shutdown
- Transport/storage perform extended preservation

Long-Term Storage Checklist

1. Full Solvent Flush

Use fresh clean solvent only.

2. Remove & Inspect Filters

Inspect for:

- Gel particles
- Skinning
- Cured fragments

Replace if restricted.

3. Protect Pump Packings

Add:

- Packing oil
- Throat seal liquid (TSL)
- Approved lubricant

This helps:

- Prevent dry packings
- Reduce moisture ingress
- Minimize corrosion

4. Seal Fluid Openings

Cap:

- Intake
- Return
- Gun outlet
- Whip ends

Atmospheric humidity alone can cure residual STPE over time.

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Cleaning Frequency Recommendations

Component	Recommended Frequency
Spray Tlp	Multiple Times Daily
Gun Filter	Daily
Manifold Filter	Daily
Lower Intake Screen	Daily
Wet Cup	Check Every Shift
Hose Inspection	Weekly
Full Pump Inspection	Monthly or Every Major Project

Signs Material Curing Inside System

Stop spraying immediately if any of the following occur:

- Pressure fluctuations
- Pulsing spray pattern
- Sudden pressure increase
- Trigger lag
- Reduced output
- Excessive tip plugging
- Lower pump hesitation
- Check valve sticking
- Material stringing in solvent

<u>These often indicate:</u>

- Partial moisture cure
- Internal skinning
- Contamination

Continuing operation can permanently damage the pump

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HULK SYSTEMS

Preventing Pump Seizure Best Practices

Use Dedicated Equipment

Do not share equipment with:

- ❌ Acrylics
- ❌ Silicones
- ❌ Waterborne Coatings
- ❌ Epoxies
- ❌ Polyurea Systems

Dedicated STPE rigs dramatically reduce contamination risk.

Use Desiccant Protection

Recommended:

- Desiccant breathers
- Sealed transfer systems
- Dry nitrogen blanket (industrial systems)

Moisture control significantly improves pump life.

Avoid Oversized Pressure Settings

Excessive pressure:

- Accelerates heat buildup
- Increases solvent flashing
- Worsens internal curing risk

Use only the pressure required for proper atomization.

Minimize Hose Length

Long hose runs:

- Increase residence time
- Increase heat
- Increase cure risk
- Increase pressure cycling

Use efficient hose sizing and routing.

HULK SYSTEMS

Cleaning After Partial Cure or Plugging Event

If a plug or restriction occurs:

DO NOT:

- Continue increasing pressure
- Dead-head the pump repeatedly
- Hammer cured material through the system

This commonly causes:

- Cracked packings
- Scored cylinders
- Rod damage
- Hydraulic overload

INSTEAD:

1. Stop operation immediately
2. Relieve pressure safely
3. Isolate restriction point
4. Disassemble affected section
5. Soak components in approved solvent
6. Inspect check valves and seats carefully
7. Replace damaged filters or packings as required

HULK SYSTEMS

Recommended Contractor Practice

For contractors regularly spraying Hulk STPE®:

Recommended setup includes:

- Dedicated hydraulic airless rig
- Dedicated hose set
- Dedicated spray gun
- Dedicated filters
- Dedicated solvent flush bucket

This reduces:

- Downtime
- Contamination
- Equipment damage
- Service costs

While improving:

- Spray consistency
- Membrane quality
- Contractor productivity

SAFETY NOTE

Always follow:

- Equipment manufacturer safety procedures
- Solvent handling requirements
- Local VOC and disposal regulations
- Spray safety protocols

High-pressure spray equipment can cause serious injury if improperly operated or cleaned.

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