



# Nipples Technical



## ENGINEERING GUIDE

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Nipples Technical  
**Materials & Styles of Nipples**

**PVC, CPVC & PE Nipples**

PVC/CPVC/PE Nipples furnished may be produced from extruded stock, or from molding grade PVC/CPVC compounds. Both processes provide quality products meeting ASTM requirements. Spears® thermoplastic nipples are produced in a variety of styles, several of which are illustrated below. These are referred to as Plain (no threads), TOE (Threaded One End), TBE (Threaded Both Ends), Grooved (which can be Plain x Groove, Groove x Thread, & Groove x Groove). Special varieties of Polyethylene Nipples include Cut-off, Four-In-One Cut-off and Four-In-One Cut-off Reducing.



Plain x Groove



TOE (Threaded One End)



PE Riser Extension Cut-Off Nipple



Groove x Thread



Plain



PE Cut-Off Nipple



Groove x Groove



TBE (Threaded Both Ends)



PE Four-In-One Cut-Off Nipple

Close Nipples are simply two (2) threads back to back. Short Nipples is a term commonly used to designate a slightly longer nipple that is usually the smallest length above "close." The following table shows length of Close and Short nipples:

**Length of Close & Short Nipples**

| Size  | 1/8"  | 1/4"  | 3/8"  | 1/2"  | 3/4"  | 1"    | 1-1/4" | 1-1/2" | 2"    | 2-1/2" | 3"    | 4"    | 6"    | 8"    | 10"   | 12"   |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|
| Close | 3/4   | 7/8   | 1     | 1-1/8 | 1-3/8 | 1-1/2 | 1-5/8  | 1-3/4  | 2     | 2-1/2  | 2-5/8 | 2-7/8 | 3-3/4 | 3-5/8 | 4     | 4-3/8 |
| Short | 1-1/2 | 1-1/2 | 1-1/2 | 1-1/2 | 1-1/2 | 2     | 2      | 2      | 2-1/2 | 3      | 3     | 3-1/2 | 4-1/2 | 4-1/2 | 4-1/2 | 5     |



### Which Threaded Joint Sealant to Use?

- Tape sealants are more susceptible to improper installation
- Paste sealants are more likely to contain incompatible chemicals
- Either type – Paste or Tape – must be properly used but **NEVER** use both!
- Do not use paste or tape on Gasket Sealed Head Adapters

*The Best Choice  
For Threaded Joints*

### Spears® Recommends a **Compatible** Paste

Paste-type thread sealants fill the threads better than tape. Application is less critical, as long as the sealant is compatible with the particular plastic used. Some “pipe dopes” and pastes can cause chemical stress cracking. Spears® **BLUE 75™** thread sealant has been specially formulated and tested for use with these plastic piping components.



### The Problem with Using TFE Tape Sealants

TFE tape sealants require special attention on application. Failure to follow the instructions below can result in female thread breaks due to excessive tape use, difficult assembly due to insufficient tape, leaks due to failure to cover starting threads, and leaks due to incorrectly applied tape that bunches at the thread entrance. Since TFE tape is a really good lubricant, care must be taken not to over-tighten taped joints.

### *If You **MUST** Use Tape Sealant, Use It Correctly!*

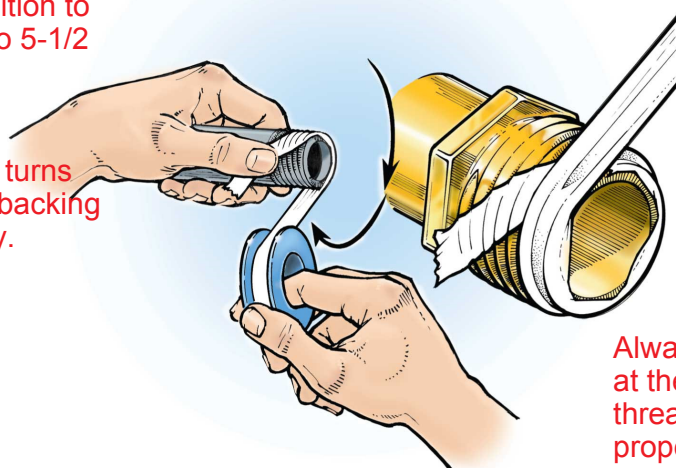
Wrap Tape In Direction of Threads  
(clockwise for right-hand thread):

- For Head Adapters, use **ONLY 2-3** wraps of tape and tighten to specified torque.
- For Female Adapter transition to metal pipe, use **ONLY 5 to 5-1/2** wraps of tape.

Hold end and pull tape tight into threads

Joint Assembly:

Tighten threaded joints 1-2 turns beyond finger tight. Avoid “backing up” the wrenched assembly. **DO NOT** over-tighten.



Use a TFE Tape Sealant with a minimum thickness of 2.5 mil.

Always cover end of fitting at the start to prevent thread seizing prior to proper joint makeup.