



PIPING SYSTEM PTE LTD  
PROFESSIONAL SUPPLIER OF PIPELINE MATERIALS AND EQUIPMENT

DRAWING NO.: ELBOW-DRAWING-AND-DATA-2026-02-27-09-10  
DRAWING DATE: 27-Feb-2026

## ELBOW DRAWING AND DIMENSIONS DATA

|         |          |              |                                                                                                               |
|---------|----------|--------------|---------------------------------------------------------------------------------------------------------------|
| OR No.: | OR999999 | DESCRIPTION: | ELBOW-12INCHES-90DEG-BEVELLED ENDS-SEAMLESS-SCH160(33.32MM)-CARBON STEEL-LONG RADIUS-GR WPHY60-ASTM A860-ASME |
| ITEM:   | 238      |              | B16.9-NACE MR0175                                                                                             |



ANSI ASME B16.9 / MSS SP-75 (in mm)

| ITEM | NAME  | TYPE   | DEGREE | MATERIAL STANDARD   | DN  | OD INCH(ES) | ODMM  | WALL THICKNESS | PROCESS | UNIT Volume (m³) | DIMENSIONS(MM) |         |       |
|------|-------|--------|--------|---------------------|-----|-------------|-------|----------------|---------|------------------|----------------|---------|-------|
|      |       |        |        |                     |     |             |       |                |         |                  | L=A+½OD        | W=A+½OD | H=OD  |
| 1    | ELBOW | R=1.5D | 90     | ASTM A860 GR WPHY60 | 300 | 12          | 323.9 | 33.32          | SMLS    | 0.00105975       | 57.2           | 57.2    | 323.9 |

MATERIAL STANDARD: ASTM A860 GR WPHY60 Chemical element composition content (%)

| COMPONENT | C   | Si   | Mn   | P    | S    | Cr  | Ni  | Cu   | Mo   | Ti   | V   | CeqMax |
|-----------|-----|------|------|------|------|-----|-----|------|------|------|-----|--------|
| Max       |     | 0.15 | 1    |      |      |     |     |      |      |      |     | ≤0.42  |
| Min       | 0.2 | 0.4  | 1.45 | 0.03 | 0.01 | 0.3 | 0.5 | 0.35 | 0.25 | 0.05 | 0.1 |        |

ASTM A860 GR WPHY60 Mechanical Properties

| CONDITION     | TENSILE STRENGTH<br>$\sigma_b$<br>Mpa | YIELD POINT<br>$\sigma_s$<br>Mpa | ELONGATION OR ELONGATION AT BREAK<br>$\delta$<br>% |
|---------------|---------------------------------------|----------------------------------|----------------------------------------------------|
| PIPE FITTINGS | ≥520                                  | ≥415                             | ≥20                                                |



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DRAWING

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