

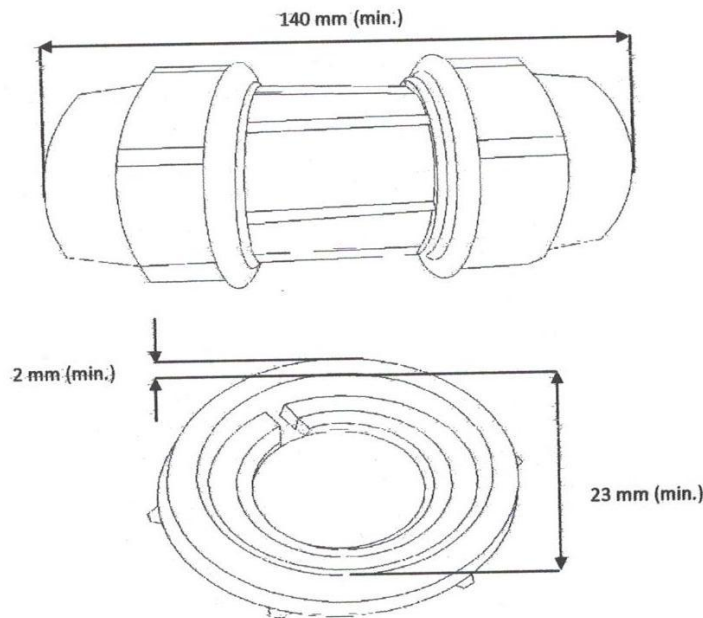
Technical Specifications

DESCRIPTIONS/SPECIFICATIONS	STATEMENT OF COMPLIANCE (State "Comply or not Comply" for each item description and specifications and attach your company shop/drawing and or brochures / and or Literatures)
PR No. 17-11-01-058 – Supply and Delivery 1 Lot of Plastic Service Connection Fittings	
The following images are provided for reference only. We are not specifying/endorsing any particular brand of equipment/material/fittings. IT IS STRONGLY ADVISED TO STRICTLY FOLLOW THE TABLE OF MATERIAL (with dimension and end connection specifications) AND MATERIAL SPECIFICATIONS PROVIDED.	
General Specifications	
Materials	At a minimum, the materials to be purchased shall conform with the international standards mentioned below and other equivalent. All materials in contact with potable water shall not have detrimental effects on the properties of the water. When used under conditions for which they are designed, pipe materials shall not constitute a toxic hazard; shall not support microbial growth nor give rise to unpleasant taste or odor, cloudiness or discoloration of the water. The concentrations of substances, chemicals and biological agents leached from pipe materials and the measurements of relevant organoleptic/physical parameters shall not exceed the maximum values recommended by the Department of Health in its publication <i>Philippine National Standards for Drinking Water</i> . Certificates of compliance from independent testing institutes as well as declarations concerning suitability for the use with potable water shall be provided.
Gate Valves and Service Valves	Valves shall be designed to provide a clear bore through the valve when fully open. It shall be equipped with a nut and shall open by turning the nut in a counterclockwise direction when viewed from the top after installation.
Coating of Ductile Iron Valves and Ductile Iron/Cast Iron Fittings	All valves and fittings including strainers, saddle clamps, flange adapters, pipe couplings and push-in fittings for PE pipes made from ductile iron shall be internally and externally fusion bonded epoxy powder coated according to the general requirements of AWWA C550/C213 and EN DIN 30677-2, DIN 3476 and RAL Quality Mark 662 with following specific requirements: Coating thickness: min. 250 microns Adhesion: min. 12N/mm ² Impact resistance: = min. impact energy 5 Nm at drop height of 1 m Porosity: zero porosity at 3,000 V Certificates of compliance from independent testing institutes shall be provided.
1) 25 pieces Coupling	
Material Type	Galvanized Steel
End Connections	FTE X FTE
Dimension	20mmØ, 6mm wall thickness (minimum)



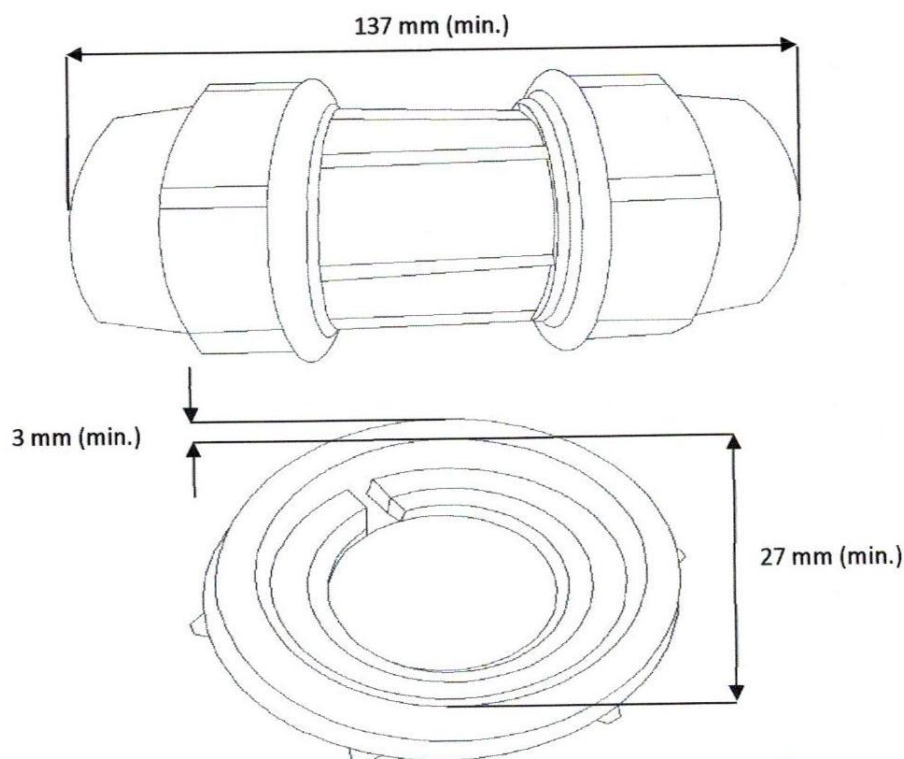
2) 37 pieces 3/4"Ø Union Coupling (P to P), CTS

Description	CTS Product Compliance	
Type	Non Loose Component, Compression	
Make	Polypropylene, Plastic	
Gross Weight	100 grams (minimum)	
Connection Ends	Inside Diameter: 23mm (minimum) Wall Thickness: 2mm (minimum)	
Length	140mm (minimum)	
Working Pressure	150 psi	
Other Requirements	Original Manufacturer's Product Brochures/Manual/Literatures Specify Delivery Packaging	



3) 300 pieces 20mmØ Union Coupling (P to P), ISO

Description	ISO Product Compliance	
Type	Non Loose Component, Compression	
Make	Polypropylene, Plastic	
Color	Black	
Gross Weight	145 grams (minimum)	
Connection Ends	Inside Diameter: 27mm (minimum) Wall Thickness: 3mm (minimum)	
Length	137mm (minimum)	
Working Pressure	150 psi	
Other Requirements	Original Manufacturer's Product Brochures/Manual/Literatures Specify Delivery Packaging	



4) 630 pieces 20mmØ OD Plastic Coupling (connector)

5) 230 pieces 25mmØ OD Plastic Coupling (connector)

6) 30 pieces 63mmØ OD Plastic Coupling (connector)

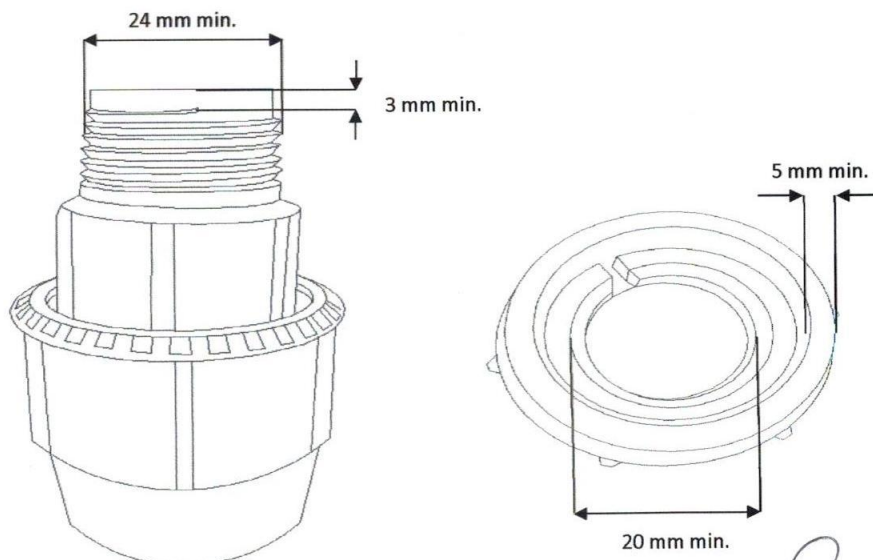
Material Type	Engineering Plastic
End Connection	CJ X CJ
Others	Compression joint of valves and fittings shall be sized to fit the outside diameter of PE tubing as specified in ISO 161/1 and ISO 4427.
	All plastic HDPE fittings compression type shall conform in accordance to ISO 14236.
	The plastic fitting body shall be opaque.
	When measured in accordance with ISO 7686, the percentage of light which passes through the wall of the fitting shall be less than or equal to 0.2 %.
	The composition of the plastics parts of the fitting exposed to ultra-violet radiation shall include a UV stabilizer.
	The body should preferably be made from one or more of the types of material listed below.

Fitting Material	MRS	Specified design stress, σ_s
	MPa	MPa
PVC-U	<25	10
PP-H	10	6.3
PP-B, PP-R	8	6.3
POM homopolymer	10	6.3
POM copolymer	10	6.3
ABS	12.5	8



7) 1,500 pieces 3/4"Ø End Cap, CTS

Description	CTS Product Compliance	
Type	Plastic, Non Loose Components	
Make	Polypropylene	
Color	Black	
Length of End Plug (after the thread)	3mm (minimum)	
Connection Ends	Male End	Female End
	Outside Diameter: 24mm (minimum)	-
	-	Inside Diameter: 20mm (minimum)
	-	Wall Thickness: 5mm (minimum)
Working Pressure	150 psi	
Other Requirements	Original Manufacturer's Product Brochures/Manual/Literatures	
	Specify Delivery Packaging	



8) 6,412 pieces 15mm x 20mm Plastic Bend 90°

9) 30 pieces 20mm Plastic Bend 90°

10) 13 pieces 20mm x 25mm Plastic Bend 90°

11) 30 pieces 25mm Plastic Bend 90°

12) 15 pieces 25mm x 32mm Plastic Bend 90°

13) 12 pieces 40mm x 50mm Plastic Bend 90°

Material Type	Engineering Plastic
End Connection	FTE X CJ
Others	Compression joint of valves and fittings shall be sized to fit the outside diameter of PE tubing as specified in ISO 161/1 and ISO 4427.
	All plastic HDPE fittings compression type shall conform in accordance to ISO 14236.
	The plastic fitting body shall be opaque.
	When measured in accordance with ISO 7686, the percentage of light which passes through the wall of the fitting shall be less than or equal to 0.2 %.
	The composition of the plastics parts of the fitting exposed to ultra-violet

radiation shall include a UV stabilizer.
 The body should preferably be made from one or more of the types of material listed below:

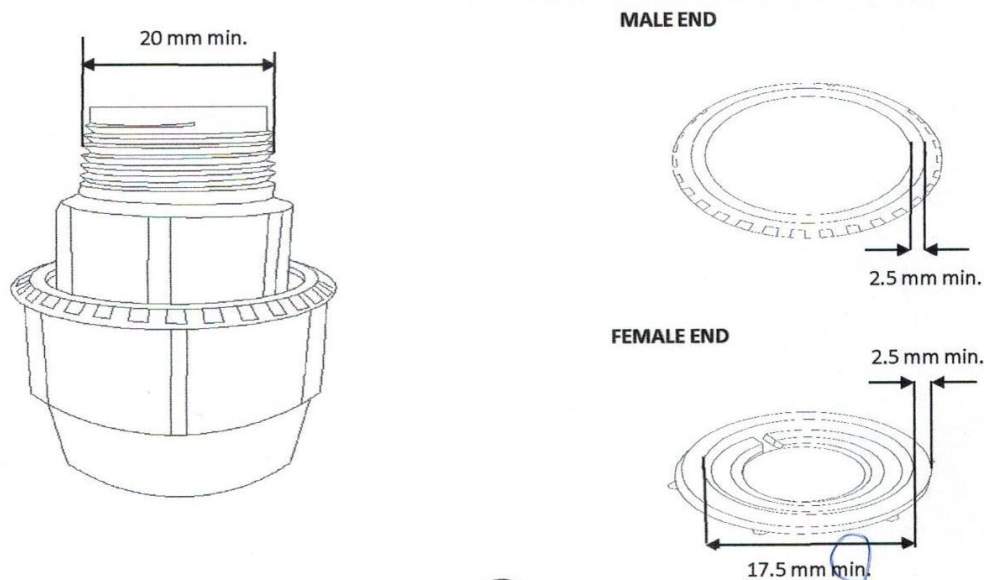
Fitting Material	MRS MPa	Specified design stress, σ_s MPa
PVC-U	<25	10
PP-H	10	6.3
PP-B, PP-R	8	6.3
POM homopolymer	10	6.3
POM copolymer	10	6.3
ABS	12.5	8

Plastic fitting materials



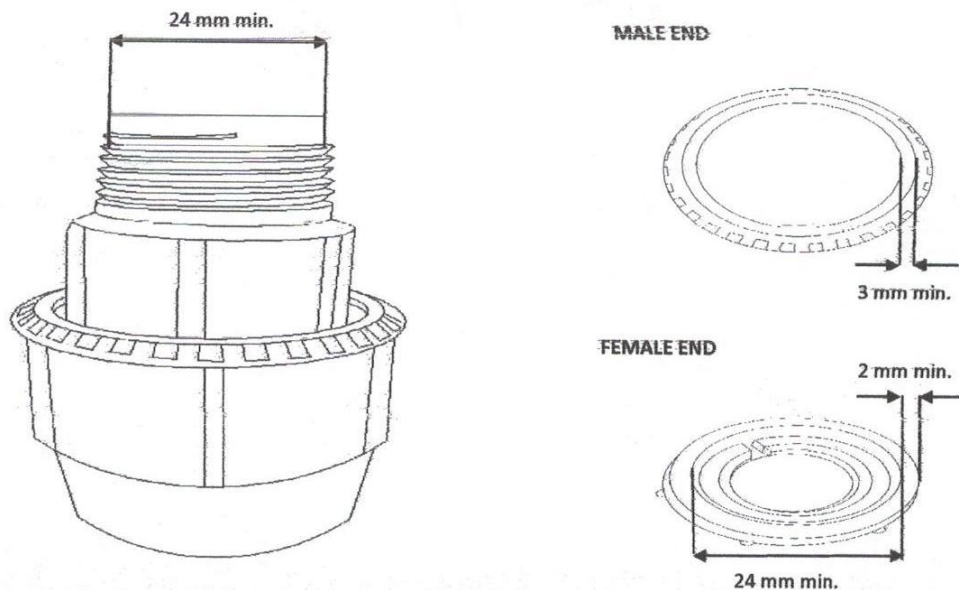
14) 250 pieces 1/2"Ø Replacement Piece, CTS

Description	CTS	
Type	Non Loose Component, Compression	
Make	Polypropylene	
Color	Black	
Gross Weight	50 grams (minimum)	
Connection Ends	Male End	Female End (CTS End)
	Outside Diameter: 20mm (minimum)	-
	-	Inside Diameter: 17.5mm (minimum)
	Wall Thickness: 2.5mm (minimum)	Wall Thickness: 2.5mm (minimum)
Working Pressure	150 psi	
Other Requirements	Original Manufacturer's Product Brochures/Manual/Literatures	
	Specify Delivery Packaging	



15) 225 pieces 3/4"Ø Replacement Piece, CTS

Description	CTS	
Type	Non Loose Component, Compression	
Make	Polypropylene	
Color	Black	
Gross Weight	70 grams (minimum)	
Connection Ends	Male End	Female End (CTS End)
	Outside Diameter: 24mm (minimum)	-
	-	Inside Diameter: 24mm (minimum)
	Wall Thickness: 3mm (minimum)	Wall Thickness: 2mm (minimum)
Working Pressure	150 psi	
Other Requirements	Original Manufacturer's Product Brochures/Manual/Literatures	
	Specify Delivery Packaging	



16) 300 pieces 20mmØ Tee, ISO

Description	ISO Product Compliance	
Type	Non Loose Components, Compression	
Make	Plastic Polypropylene	
Color	Black	
Gross Weight	240 grams (minimum)	
Connection Ends	Inside Diameter: 26mm (minimum)	
	Wall Thickness: 3mm (minimum)	
Length (with tighten cap)	Horizontal: 183mm (minimum)	
	Vertical: 109mm (minimum)	
Working Pressure	150 psi	
Other Requirements	Original Manufacturer's Product Brochures/Manual/Literatures	
	Specify Delivery Packaging	

