

■UPVC Pipe Covered with FRP Layer

## ESLON® VPFW

■CPVC Pipe Covered with FRP Layer





## ESLON® HTFW



Excellent Pressure and Heat Resistant Plastic Pipe for Plant Pipeline



SEKISUI CHEMICAL CO., LTD.

### Installation of ESLON VPFW · HTFW

| 1. Cutting of FRP Layer                                                                                                                                                        | 2. Peeling of FRP Layer                                                                                                                                                                                           | 3. Finishing of stripped surface                                                         | 4. Cement Jointing                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|                                                                                             |                                                                                                                                |       |                                       |
| Mark the peeling line on the surface first. Cut the FRP Layer circumferentially along the peeling line using a handsaw and then cut it spirally for easy removal of FRP layer. | Quickly and evenly heat the peeling part of FRP layer by a torch (propane gas burner etc) and peel off the softened FRP layer using a pair of pliers. ※In case PVC part is deformed by heat, it must be reformed. | Sand the stripped surface to clean saw flaw, burn or residuals, using a belt sander etc. | Clean the PVC surface of pipe and inner surface of fitting and then bond them by Esilon Solvent Cement No.100 or No.110. |

| 5. PVC Rod Welding of the Joint                                                     | 6. FRP Reinforcement of the Joint                                                                                                 |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|  |                                                |
| After the cement is dry, weld the joint line with PVC rod.                          | Make FRP reinforcement by hand lay-up at the jointed part after sanding the FRP surface of pipe and fittings using a belt sander. |

### Relative Products of ESLON VPFW/HTFW

| Product                  | Nominal D | Remarks                                                                                         |
|--------------------------|-----------|-------------------------------------------------------------------------------------------------|
| Ball valve               | 15~100    | For corrosion resistant line.                                                                   |
| Diaphragm valve          | 15~150    | Valves are available in manual and automatic (air or electric) models, and in grades of HT, PP. |
| Butterfly valve          | 40~300    | PVDF etc.                                                                                       |
| Check valve              | 15~150    |                                                                                                 |
| Gate valve               | 50~200    |                                                                                                 |
| Stop valve               | 15~100    |                                                                                                 |
| ESLON Flange             | 13~300    | UPVC, HI, HT/5K, 10K                                                                            |
| ESLON Gasket             | 13~350    | EPDM, PTFE, IIR/5K, 10K                                                                         |
| PVDF Pipe & Fittings     | 13~150    | For hot ultra-pure water circulation or heat sterilization.                                     |
| Clean Pipe & Fittings    | 13~150    | PVC pipe for ultra-pure water.                                                                  |
| HT Clean Pipe & Fittings | 13~150    | For warm ultra-pure water.                                                                      |
| ESLON Pipe VP            | 13~300    | General purpose pressure pipe.                                                                  |
| ESLON Pipe VU            | 40~600    | Non-pressure/drain pipe                                                                         |
| ESLON TS Fittings        | 13~150    | For pressure pipe                                                                               |
| ESLON DV/VU Fittings     | 28~300    | For non-pressure / drain pipe                                                                   |
| ESLON HT Pipe            | 13~150    | 13 to 50A are JIS Standard products.                                                            |
| ESLON HT Fittings        | 13~150    |                                                                                                 |

※ Detailed brochures and technical data sheets of the relative products are available on request.

### Tools and Materials for installation

|                  |                                                                               |
|------------------|-------------------------------------------------------------------------------|
| <b>Tools</b>     | Handsaw, Propane gas burner, Belt sander, Welding machine                     |
| <b>Materials</b> | Adhesive, Polyester resin, Curing agent, Glass fiber (Tricot tape, Cloth etc) |

※ Technical Data Sheet and Installation Manual of VPFW/HTFW are available on request.

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# FRP Reinforced UPVC/CPVC Pipe ESLON VPFW · HTFW

Reliable plant piping material of high corrosion, pressure and heat resistances

## Introduction

"ESLON VPFW/HTFW" the FRP reinforced UPVC/CPVC pipes of Sekisui Chemical Co. have been well accepted by many customers as corrosion and heat resistant piping material.

Now further improvement for easier application is made on this product to respond to the requests of customers.

The workability being improved, ESLON VPFW/HTFW yet retains the chemical resistance to acids, alkalis and salts.

And since the FRP layer is constructed by filament winding, the product has excellent pressure and heat resistance, and very small thermal expansion rate, making it a very stable piping material.

## Features of ESLON VPFW/HTFW

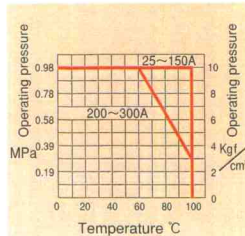
1. High corrosion resistance.
2. Excellent pressure and heat resistance.
3. Small thermal expansion and contraction.
4. Good adhesion between FRP layer and PVC pipe.
5. Small deflection.
6. Light weight for easy handling.

## Application Field of ESLON VPFW/HTFW

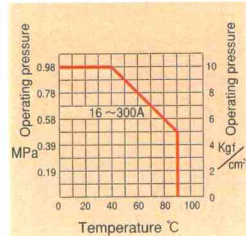
- **Plant piping** : For all kinds of chemical solution lines of soda mfg., plating, acid washing, non-ferrous refining, fiber mill, paper & pulp mill, fertilizer mfg., drug synthesis, food processing etc.
- **Seawater piping** : Hatchery, fishery laboratory, salt production, desalination of saltwater, aquarium, power plant cooling water line etc.

## Relationship between Operating Pressure and Temperature

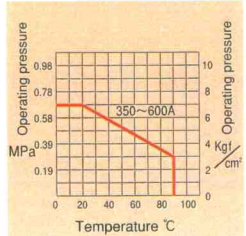
### HTFW



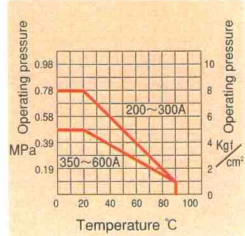
### VPFM(H-Type)



### VPFW(M-Type)

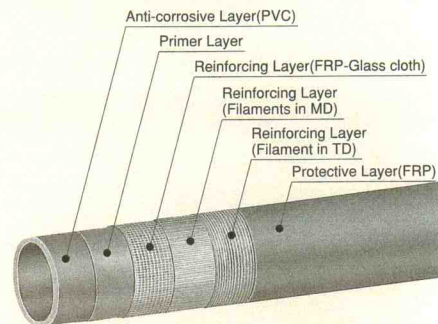


### VPFW(N-Type)

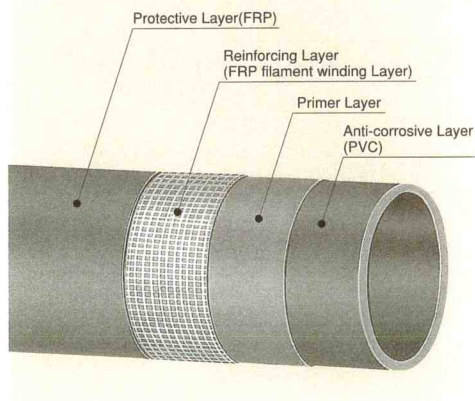


## Structure of VPFW/HTFW

Structure of ESLON VPFW(16~150A)  
Structure of ESLON HTFW(25~150A)

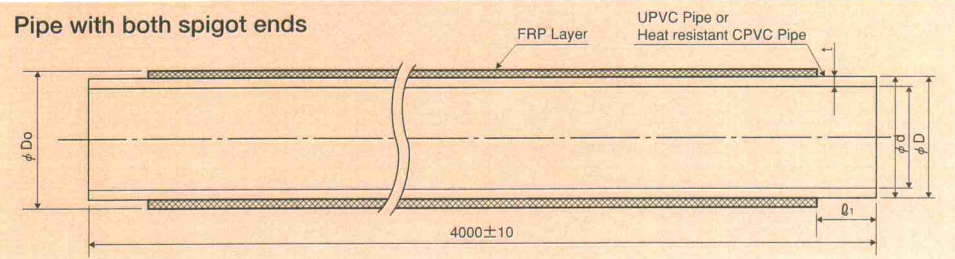


Structure of ESLON VPFW(200~600A)  
Structure of ESLON HTFW(200~300A)



## Standard Specification

### Pipe with both spigot ends



### VPFW(H-Type for high pressure use)

Unit : mm

| Nom.Dia (A) | PVC OD D | PVC wall t | Stripped end ℓ1 | FRP OD Do (Approx) | PVC ID (Approx) | Approx. weight (kg/m) |
|-------------|----------|------------|-----------------|--------------------|-----------------|-----------------------|
| 16          | 22±0.2   | 3.0        | 40              | 24                 | 16              | 0.37                  |
| 20          | 26±0.2   | 3.0        | 45              | 28                 | 20              | 0.44                  |
| 25          | 32±0.2   | 3.5        | 50              | 34                 | 25              | 0.61                  |
| 30          | 38±0.2   | 3.5        | 55              | 40                 | 31              | 0.73                  |
| 40          | 48±0.2   | 4.0        | 65              | 50                 | 40              | 1.03                  |
| 50          | 60±0.25  | 4.5        | 75              | 63                 | 51              | 1.45                  |
| 65          | 76±0.3   | 4.5        | 75              | 78                 | 67              | 1.90                  |
| 75          | 89±0.3   | 5.9        | 85              | 91                 | 77              | 2.78                  |
| 100         | 114±0.4  | 7.1        | 105             | 117                | 100             | 4.31                  |
| 125         | 140±0.5  | 7.5        | 125             | 143                | 125             | 5.63                  |
| 150         | 165±0.6  | 9.6        | 155             | 168                | 146             | 8.14                  |
| 200         | 216±0.7  | 11.0       | 175             | 221                | 194             | 13.0                  |
| 250         | 267±0.9  | 13.6       | 205             | 272                | 240             | 19.5                  |
| 300         | 318±1.0  | 16.2       | 205             | 324                | 286             | 27.2                  |

Remark : PVC pipe shall conform to VP Type of JIS K6741.

### HTFW

Unit : mm

| Nom.Dia (A) | PVC OD D | PVC wall t | Stripped end ℓ1 | FRP OD Do (Approx) | PVC ID (Approx) | Approx. weight (kg/m) |
|-------------|----------|------------|-----------------|--------------------|-----------------|-----------------------|
| 25          | 32±0.2   | 3.5        | 50              | 34                 | 25              | 0.62                  |
| 30          | 38±0.2   | 3.5        | 55              | 40                 | 31              | 0.74                  |
| 40          | 48±0.2   | 4.0        | 65              | 50                 | 40              | 1.05                  |
| 50          | 60±0.25  | 4.5        | 75              | 63                 | 51              | 1.48                  |
| 65          | 76±0.3   | 5.0        | 80              | 78                 | 67              | 2.09                  |
| 75          | 89±0.3   | 5.8        | 95              | 91                 | 77              | 2.79                  |
| 100         | 114±0.4  | 7.0        | 110             | 117                | 100             | 4.33                  |
| 125         | 140±0.5  | 8.2        | 130             | 143                | 125             | 6.12                  |
| 150         | 165±0.6  | 9.7        | 155             | 168                | 146             | 8.35                  |

Remark : CPVC shall conform to JIS K6776(50A or below)and Sekisui HT Standard(65A or above).

### VPFW(M-Type for medium pressure use)

Unit : mm

| Nom.Dia (A) | PVC OD D | PVC wall t | Stripped end ℓ1 | FRP OD Do (Approx) | PVC ID (Approx) | Approx. weight (kg/m) |
|-------------|----------|------------|-----------------|--------------------|-----------------|-----------------------|
| 350         | 370±1.2  | 11.2       | 270             | 374                | 348             | 22.9                  |
| 400         | 420±1.3  | 12.6       | 320             | 425                | 395             | 29.5                  |
| 450         | 470±1.5  | 14.1       | 370             | 475                | 442             | 36.5                  |
| 500         | 520±1.6  | 15.6       | 370             | 527                | 489             | 45.9                  |
| 600         | 630±3.2  | 19.2       | 420             | 637                | 592             | 65.1                  |

Remark : PVC pipe shall conform to VU Type of JIS K6741.

### VPFW(N-Type for low pressure use)

Unit : mm

| Nom.Dia (A) | PVC OD D | PVC wall t | Stripped end ℓ1 | FRP OD Do (Approx) | PVC ID (Approx) | Approx. weight (kg/m) |
|-------------|----------|------------|-----------------|--------------------|-----------------|-----------------------|
| 200         | 216±0.7  | 11.0       | 175             | 219                | 194             | 11.5                  |
| 250         | 267±0.9  | 13.6       | 205             | 270                | 240             | 17.2                  |
| 300         | 318±1.0  | 16.2       | 205             | 321                | 286             | 23.9                  |
| 350         | 370±1.2  | 11.2       | 270             | 373                | 348             | 20.3                  |
| 400         | 420±1.3  | 12.6       | 320             | 423                | 395             | 25.5                  |
| 450         | 470±1.5  | 14.1       | 370             | 473                | 442             | 31.5                  |
| 500         | 520±1.6  | 15.6       | 370             | 523                | 489             | 38.3                  |
| 600         | 630±3.2  | 19.2       | 420             | 633                | 592             | 56.1                  |

Remark : PVC pipe shall conform to VP Type(300A or below)and VU Type(350A or above)of JIS K6741.

## Full Lines of VPFW · HTFW Fittings

### 16~150A

| Item              | Nominal Size  |
|-------------------|---------------|
| Socket            | 16~150        |
| Reducer           | 20×16~150×100 |
| Eccentric Reducer | 25×20~150×100 |
| Tee               | 16~150        |
| Reducing Tee      | 20×16~150×65  |
| 90° Elbow         | 16~150        |
| 45° Elbow         | 16~150        |
| Flange            | 16~150        |

### 200~600A

| Item              | Nominal Size   |
|-------------------|----------------|
| Socket            | 200~600        |
| Reducer           | 200×75~600×350 |
| Eccentric Reducer | 200×75~600×350 |
| Tee               | 200~600        |
| Reducing Tee      | 200×75~600×350 |
| 90° Elbow         | 200~600        |
| 45° Elbow         | 200~600        |
| Flange            | 200~600        |