



# GCER MARINE PIPING SYSTEME

## Product description:

**GCER MARINE PIPING SYSTEME (PN 10 & PN 16 ; Full vacuum and Collapse resistant) ;** Filament Wound Glassfiber reinforced epoxy vinyl Ester Resin /Polyester (pipes and fittings).

**Gcer-MarineFire-PW :** Is intended for potable water systems,

**Gcer-Marinefire-PW-GRP :** that the internal liner is with a Polyester Isophtalique Resin,

**Gcer-Marinefire-PW-GRV :** that the internal liner is with an Epoxy Vinyl ester Resin,

PW = “products is NSF Mark certified”

**Gcer-Marine-Fire-ENS :** is electrical non-conductive systems (Pipe and Fittings)

**Gcer-MarineFire-ECS :** is electrical conductive systems (Pipe and Fittings)

**Gcer-MarineFire-F3 :** Is with fire protection layer in the outside.

| Series                 | Characteristics                                                                                        | Joining System                        | Maximum Operating Temperature | Maximum Operating Pressure    | Nominal Size mm |
|------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------|-------------------------------|-----------------|
| Gcer-Marinefire-PW-GRP | Is intended for potable water systems, that the internal liner is with a Polyester Isophtalique Resin, | <b>Flanged joints<br/>Butt joints</b> | <b>65°C</b>                   | <b>Full vaccum<br/>16 Bar</b> | <b>25-1000</b>  |
| Gcer-Marinefire-PW-GRV | Is intended for potable water systems, that the internal liner is with an Epoxy Vinyl ester Resin,     | <b>Flanged joints<br/>Butt joints</b> | <b>95°C</b>                   | <b>Full vaccum<br/>16 Bar</b> | <b>25-1000</b>  |
| Gcer-Marine-Fire-ENS   | is electrical non-conductive systems (Pipes and Fittings)                                              | <b>Flanged joints<br/>Butt joints</b> | <b>95°C</b>                   | <b>Full vaccum<br/>16 Bar</b> | <b>25-1000</b>  |
| Gcer-MarineFire-ECS    | is electrical conductive systems (Pipe and Fittings)                                                   | <b>Flanged joints<br/>Butt joints</b> | <b>95°C</b>                   | <b>Full vaccum<br/>16 Bar</b> | <b>25-1000</b>  |
| Gcer-MarineFire-F3     | Is with fire protection layer in the outside.                                                          | <b>Flanged joints<br/>Butt joints</b> | <b>95°C</b>                   | <b>Full vaccum<br/>16 Bar</b> | <b>25-1000</b>  |

| Series                 | Characteristics                                                                                         | Liner           |             | Reinforcement  |             | graphite carbon black powder         | fire protection layer |                        |
|------------------------|---------------------------------------------------------------------------------------------------------|-----------------|-------------|----------------|-------------|--------------------------------------|-----------------------|------------------------|
|                        |                                                                                                         | Corrosion Layer | Thickness   | Resin          | Thickness   | Resin                                | Thickness             | Resin                  |
| Gcer-Marinefire-PW-GRP | Is intended for potable water systems, that the internal liner is with a Polyester Isophthalique Resin, | 1,5 mm          | Polyester   | As to Standard | Polyester   | /                                    | /                     | /                      |
| Gcer-Marinefire-PW-GRV | Is intended for potable water systems, that the internal liner is with an Epoxy Vinyl ester Resin,      | 1,5 mm          | Vinyl ester | As to Standard | Polyester   | /                                    | /                     | /                      |
| Gcer-Marine-Fire-ENS   | is electrical non-conductive systems (Pipe and Fittings)                                                | 2.5 mm          | Vinyl ester | As to Standard | Vinyl ester | /                                    | /                     | /                      |
| Gcer-MarineFire-ECS    | is electrical conductive systems (Pipe and Fittings)                                                    | 2.5 mm          | Vinyl ester | As to Standard | Vinyl ester | 30 % in the resin for wall thickness |                       |                        |
| Gcer-MarineFire-F3     | Is with fire protection layer in the outside.                                                           | 2.5 mm          | Vinyl ester | As to Standard | Vinyl ester | /                                    | Minimum 3 mm          | flame retardancy Resin |

-Internal pressure: as per below tables

PIPES:

| Gcer-Marinefire-PW-GRP and Gcer-Marinefire-PW-GRV |      |                                                                                        |    |    |    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |
|---------------------------------------------------|------|----------------------------------------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
|                                                   |      | Minimum wall thickness [mm], incl. internal liner (1,5 mm) and external liner (0,2 mm) |    |    |    |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |
| INT p .PN [bar]                                   | Ø    | 25                                                                                     | 32 | 40 | 50 | 65  | 80  | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500  | 600  | 700  | 800  | 900  | 1000 |
|                                                   | 6    | 4                                                                                      | 4  | 4  | 4  | 4   | 3,7 | 3,7 | 3,7 | 3,7 | 3,7 | 3,7 | 3,7 | 3,7 | 4,8 | 4,8 | 4,8  | 5,9  | 5,9  | 7    | 8,1  | 8,1  |
|                                                   | 10   | 4                                                                                      | 4  | 4  | 4  | 4   | 3,7 | 3,7 | 3,7 | 4,8 | 4,8 | 3,8 | 3,8 | 5,9 | 5,9 | 7   | 7    | 8,1  | 9,2  | 10,3 | 11,4 | 12,5 |
|                                                   | 16** | 4                                                                                      | 4  | 4  | 4  | 4,1 | 3,7 | 3,7 | 3,7 | 4,8 | 4,8 | 5,9 | 7   | 8,1 | 9,2 | 9,2 | 10,3 | 12,5 | 13,6 | 15,8 | 18   | 19,1 |

\*\* Full Vacuum

| Gcer-Marine-Fire-ENS and Gcer-MarineFire-ECS |      |                                                                                        |    |    |    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |
|----------------------------------------------|------|----------------------------------------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
|                                              |      | Minimum wall thickness [mm], incl. internal liner (2,5 mm) and external liner (0,2 mm) |    |    |    |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |
| INT p .PN [bar]                              | Ø    | 25                                                                                     | 32 | 40 | 50 | 65  | 80  | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400  | 450  | 500  | 600  | 700  | 800  | 900  | 1000 |
|                                              | 6    | 5                                                                                      | 5  | 5  | 5  | 5   | 4,7 | 4,7 | 4,7 | 4,7 | 4,7 | 4,7 | 4,7 | 4,7 | 5,8  | 5,8  | 5,8  | 6,9  | 6,9  | 8    | 9,1  | 9,1  |
|                                              | 10   | 5                                                                                      | 5  | 5  | 5  | 5   | 4,7 | 4,7 | 4,7 | 5,8 | 5,8 | 5,8 | 5,8 | 6,9 | 6,9  | 8    | 8    | 9,1  | 10,2 | 11,3 | 12,4 | 13,5 |
|                                              | 16** | 5                                                                                      | 5  | 5  | 5  | 5,1 | 4,7 | 4,7 | 4,7 | 5,8 | 5,8 | 6,9 | 8   | 9,1 | 10,2 | 10,2 | 11,3 | 13,5 | 14,6 | 16,8 | 19   | 20,1 |

| Gcer-MarineFire-F3 |      |                                                                                                                    |    |    |    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |
|--------------------|------|--------------------------------------------------------------------------------------------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
|                    |      | Minimum wall thickness [mm], incl. internal liner (2,5 mm) and fire protection layer in the outside (Minimum 3 mm) |    |    |    |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |
| INT p .PN [bar]    | Ø    | 25                                                                                                                 | 32 | 40 | 50 | 65  | 80  | 100 | 125 | 150 | 200 | 250 | 300 | 350  | 400  | 450  | 500  | 600  | 700  | 800  | 900  | 1000 |
|                    | 6    | 8                                                                                                                  | 8  | 8  | 8  | 8   | 7,7 | 7,7 | 7,7 | 7,7 | 7,7 | 7,7 | 7,7 | 7,7  | 8,8  | 8,8  | 8,8  | 9,9  | 9,9  | 11   | 12,1 | 12,1 |
|                    | 10   | 8                                                                                                                  | 8  | 8  | 8  | 8   | 7,7 | 7,7 | 7,7 | 8,8 | 8,8 | 8,8 | 8,8 | 9,9  | 9,9  | 11   | 11   | 12,1 | 13,2 | 14,3 | 15,4 | 16,5 |
|                    | 16** | 8                                                                                                                  | 8  | 8  | 8  | 8,1 | 7,7 | 7,7 | 7,7 | 8,8 | 8,8 | 9,9 | 11  | 12,1 | 13,2 | 13,2 | 14,3 | 16,5 | 17,6 | 19,8 | 22   | 23,1 |

Fittings: (as given in GCER standard Doc. No. STD-GAF-01)

Elbows (30° – 90°), Tees (equal/reduced), Reducers (concentric/eccentric), blind flanges, Caps ,Stub ends and adapters, Flanges , Jointing methods