

YARBROUGH MARKETING, INC.

Leaders in Pipeline Sphere Technology
Pipeline Spheres, Cups, Discs and Maintenance Products

SERVING PIPELINERS FOR OVER 50 YEARS



For over 50 years, pipeline companies, service contractors, and pipeline engineers have turned to C.W. Yarbrough for advice on the proper design and use of spheres, cups, discs and other quality maintenance products. The name Yarbrough and spheres are practically the same.

In 1952, C.W. Yarbrough developed the **FIRST** sphere ever used. The sphere was first used by Shell Pipeline Company running from St. Louis, Missouri to Chicago, Illinois.

As the Company's reputation for outstanding quality, attention to detail and competitive pricing grew, Yarbrough Marketing expanded into other associated pipeline maintenance products including line markers, foam pigs, detectors and end-seals.

As demands from the pipeline industry increased, Yarbrough Marketing developed new products to meet these challenges. Recently, the company introduced a new line of spheres, featuring the **C.W. Compound**. This proprietary compound was developed to keep spheres flexible in **Cold Weather**. However, even at higher temperatures, recent field tests have shown the compound to have:

- Outstanding solvent resistance
- Superior abrasion and wear resistance
- Superior tear resistance
- Superior low-temperature properties in service

No other sphere on the market today will outlast our new C.W. sphere compound.



Mike and C.W. Yarbrough

The new C.W. sphere compound works well in gasoline, jet fuel, high aromatic solvents, crude oil and diesel fuel. It also works very well in both gasoline and diesel blends with either Ethanol or Ether (MTBE). In the near future, when the new ultra-low sulfur diesel fuel specification becomes law, our C.W. sphere compound is also recommended for this service.

Our latest and best polyurethane sphere compound, the new C.W. COMPOUND, is formulated for tough, high aromatic meter prover and crude pipeline service. We also have a modified C.W. COMPOUND for high pressure gas service that is used to clean paraffin and condensate liquids out of gas pipelines. When ordering spheres, please tell us the service in which the sphere will be used: meter prover, crude, L.P.G. high pressure gas, ultra-low sulfur diesel or product separation (batch).



TOUGHEST SPHERE, PERIOD!

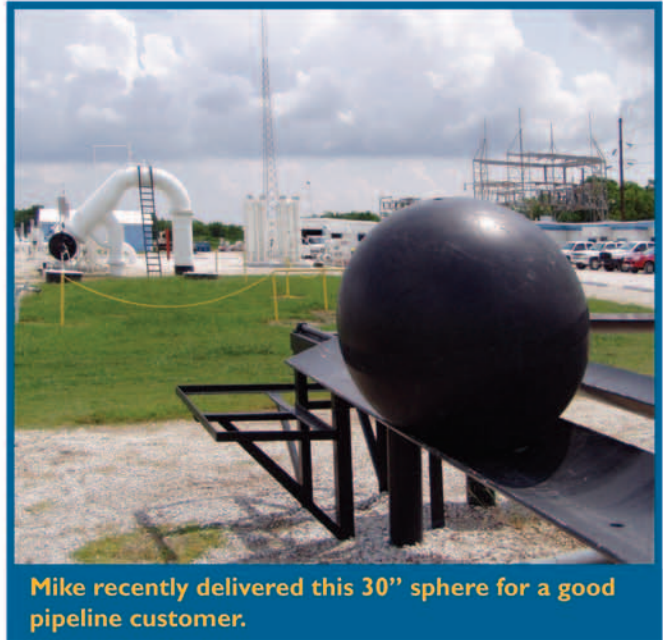
WHO'S NEW AT YARBROUGH MARKETING, INC.?



Please Welcome Mike Yarbrough!

Mike Yarbrough has joined the company as Vice-President of Marketing. Mike lives in Spring, Texas, and attended Sam Houston University in Huntsville, Texas. Mike enjoys fishing, hunting, and spending time with his wife Andrea and three lovely daughters Courtney, Brittney, and Sydney.

Mike is currently working on expanding our marketing efforts through Global Representatives. He is also looking at other products that will fit with existing product lines to enhance our Marketing capabilities. Because sales of our products are growing nicely in South America, attention is now being focused on Canada, Saudi Arabia, China and Russia.



Mike recently delivered this 30" sphere for a good pipeline customer.

ASK YARBROUGH!

Pipeline Spheres from Yarbrough come in all colors and sizes.

What do the sphere colors mean and what are their applications?

The colors represent traditional service applications in which the spheres are used. While the chart below is not all inclusive, some of the more typical applications are listed.

How do I correctly size a pipeline sphere?

All spheres should be sized with either water or 50:50 mixture of water and antifreeze (glycol). Spheres that will never be used in freezing weather should use plain water. Spheres that will be used in freezing weather (or colder) should use the 50:50 water and antifreeze mixture. IT IS VERY IMPORTANT THAT ALL AIR BE REMOVED OUT OF THE SPHERE AFTER INFLATING WITH LIQUID. Any air left in the sphere will cause meter reading problems.

We recommend most spheres be sized 2% above the pipe I.D. In some situations, 1.5% may be better for higher durometer spheres in L.P.G. services. Some customers inflate the sphere 3 or 4% above the pipe I.D. for batch separation.

PIPELINE SPHERES RECOMMENDED TEMPERATURE & SERVICE APPLICATIONS

| Sphere Type | Minimum | Maximum | Recommended Service Applications |
|------------------------|----------------|------------------------------|---|
| Yellow Polyurethane | -20 F -29 C | Oil – 180 F Water – 160 F | Meter Prover Service |
| Green Polyurethane | -0 F -18 C | as above | Product Separation, Cleaning, Etc. |
| Blue Polyurethane | -0 F -18 C | as above | MTBE Service, Low Sulfur Diesel Service |
| Red Polyurethane | -0 F -18 C | as above | Off-shore high pressure Gas Service Distillent Removable, Cleaning, etc. |
| Orange Polyurethane | -0 F -18 C | as above | Low pressure Gas Service |
| Grey Polyurethane | -30 F -35 C | as above | Extreme low temperature Meter Prover Service |
| Black Neoprene | -20 F -29 C | Oil – 280 F Water – 212 F | General purpose De-watering, Meter Prover, and Batching Separation |

What if I need a size not shown or I have a new special application?

If you need a special sized sphere, we will assist you in developing a new sphere mold for your specific application. We have a new, modern machine shop that can build most molds.

Do you have a chart that gives Scraper Cup specifications?

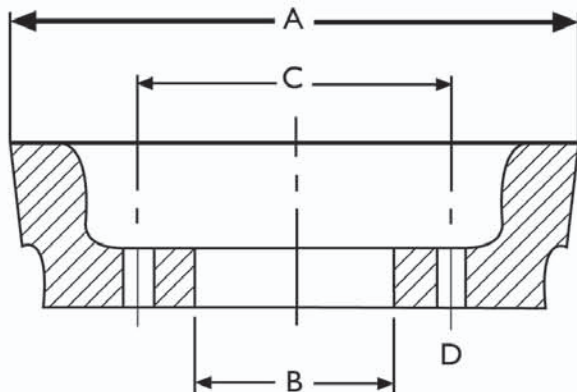
Yes, the chart below shows our standard sizes for scraper cups and discs. For sizes not shown, or for custom specifications, please call, fax or e-mail us with your requirements. If the tooling is not currently available, we will quote new tooling and piece price for your consideration.

**YARBROUGH PIPELINE PRODUCTS
SCRAPER CUP SPECIFICATIONS**

| SIZE | A | B | C | D | E |
|------|--------|--------|--------|----------|------|
| 6" | 6.50" | * | * | * | 1.4 |
| 8" | 8.31" | * | * | * | 2.2 |
| 10" | 10.37" | * | * | * | 3.6 |
| 12" | 12.37" | * | * | * | 5.5 |
| 14" | 14" | * | * | * | 7.5 |
| 16" | 16" | 8.75" | 11" | 8-9/16" | 8.8 |
| 18" | 18.12" | 10.87" | 12.75" | 8-9/16" | 11.0 |
| 20" | 20.25" | 10.87" | 13.50" | 12-9/16" | 19.5 |
| 22" | 21.75" | 10.87" | 13.50" | 12-9/16" | 23.0 |
| 24" | 24.25" | 14.06" | 16.50" | 14-9/16" | 27.0 |
| 26" | 26.25" | 14.12" | 16.50" | 14-9/16" | 34.8 |
| 30" | 30.25" | 16.12" | 19.50" | 16-9/16" | 57.0 |
| 36" | 36.25" | 22.12" | 25.00" | 22-9/16" | 75.0 |

LEGEND

A: OUTSIDE DIAMETER C: BOLT HOLE CIRCLE
 B: CENTER HOLE D: BOLT HOLES (NO & SIZE)
 E: APPROX. WT. (LBS)



WE ALSO CARRY:



Pipeline Pigging Foam Pigs



Pipeline Markers



Sphere Detectors



End Seals

Top Blue Figures are wall thickness

Bottom Red Figures are inside diameter

All figures are approximate and for reference only.

| PIPE SCHEDULES | | | | | | | | | | | | | | |
|----------------|--------|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| SCHEDULE | 5 | 10 | 20 | 30 | 40 | STAN- DARD | 60 | 80 | EX STRONG | 100 | 120 | 140 | 160 | XX STRONG |
| NOM. DIA. | O.D. | WALL THICK I.D. | | | | | | | | | | | | |
| 2" | 2.375 | .065 2.245 | .109 2.157 | | .154 2.067 | .154 2.067 | | .218 1.939 | .218 1.939 | | | | .343 1.689 | .436 1.503 |
| 2.5" | 2.875 | .083 2.709 | .120 2.635 | | .203 2.469 | .203 2.469 | | .276 2.323 | .276 2.323 | | | | .375 2.125 | .552 1.771 |
| 3" | 3.500 | .083 3.334 | .120 3.260 | | .216 3.068 | .216 3.068 | | .300 2.900 | .300 2.900 | | | | .437 2.626 | .600 2.300 |
| 3.5" | 4.000 | .083 3.834 | .120 3.760 | | .226 3.548 | .226 3.548 | | .318 3.364 | .318 3.364 | | | | | .636 2.728 |
| 4" | 4.500 | .083 4.334 | .120 4.260 | | .237 4.026 | .237 4.026 | .281 3.938 | .337 3.826 | .337 3.826 | | .437 3.626 | | .531 3.438 | .674 3.152 |
| 5" | 5.563 | .109 5.345 | .134 5.295 | | .258 5.047 | .258 5.047 | | .375 4.813 | .375 4.813 | | .500 4.563 | | .625 4.311 | .750 40.63 |
| 6" | 6.625 | .109 6.407 | .134 6.357 | | .280 6.065 | .280 6.065 | | .432 5.761 | .432 5.761 | | .562 5.501 | | .718 5.189 | .864 4.897 |
| 7" | 7.625 | | | | | .301 7.023 | | | .500 6.625 | | | | | .875 5.875 |
| 8" | 8.625 | .109 8.407 | .148 8.329 | .250 8.125 | .277 8.071 | .322 7.981 | .406 7.813 | .500 7.625 | .500 7.625 | .594 7.437 | .719 7.187 | .812 7.001 | .906 6.813 | .875 6.875 |
| 9" | 9.625 | | | | | .342 8.941 | | | .500 8.625 | | | | | |
| 10" | 10.750 | .134 10.482 | .165 10.420 | .250 10.250 | .307 10.136 | .365 10.020 | .500 9.750 | .593 9.564 | .500 9.750 | .718 9.314 | .843 9.064 | 1.000 8.750 | 1.125 8.500 | |
| 11" | 11.750 | | | | | .365 11.000 | | | .500 10.750 | | | | | |
| 12" | 12.750 | .156 12.438 | .180 12.390 | .250 12.250 | .330 12.090 | .406 11.938 | .562 11.626 | .687 11.376 | .500 11.750 | .843 11.064 | 1.000 10.750 | 1.125 10.500 | 1.312 10.126 | |
| 14" | 14.000 | | .250 13.500 | .312 13.376 | .375 13.250 | .437 13.126 | .375 13.250 | .593 12.814 | .750 12.500 | .500 13.000 | .937 12.126 | 1.093 11.814 | 1.250 11.500 | 1.406 11.188 |
| 16" | 16.000 | | .250 15.500 | .312 15.376 | .375 15.250 | .500 15.000 | .375 15.250 | .656 14.688 | .843 14.314 | .500 15.000 | 1.031 13.938 | 1.218 13.564 | 1.437 13.126 | 1.593 12.814 |
| 18" | 18.000 | | .250 17.500 | .312 17.376 | .437 17.126 | .562 16.876 | .375 17.250 | .750 16.500 | .937 16.126 | .500 17.000 | 1.156 15.688 | 1.375 15.250 | 1.562 14.876 | 1.781 14.438 |
| 20" | 20.000 | | .250 19.500 | .375 19.250 | .500 19.000 | .593 18.814 | .375 19.250 | .812 18.376 | 1.031 17.938 | .500 19.000 | 1.280 17.440 | 1.500 17.000 | 1.750 16.500 | 1.968 16.064 |
| 24" | 24.000 | | .250 23.500 | .375 23.250 | .562 22.876 | .687 22.626 | .375 23.250 | .968 22.064 | 1.218 21.564 | .500 23.000 | 1.531 20.938 | 1.812 20.376 | 2.062 19.876 | 2.343 19.134 |

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REPRESENTED BY: