



CASE STUDY



THE NEW AMERICAN HOME 2013
Built to the National Association of Home Builders (NAHB) National Green Building Standard and the Department of Energy's (DOE) Energy Star® Program

New American Home 2013 - NGBS "Emerald" Status Showcase Home in Henderson, Nevada Features Spears® Manufacturing Company FlameGuard® CPVC Fire Sprinkler Products

The nearly 6800-square-foot, three-story New American Home 2013, built in Henderson, Nevada outside of Las Vegas, is unique compared with any other showcase home. Built using state-of-the-art green building technologies, this modern beautifully designed home also includes zero line swimming pools, fountains and solar elements. What makes this home distinct is that it has achieved "Emerald" status, the highest level of the National Association of Home



Builders (NAHB) National Green Building Standard (NGBS) and the Department of Energy's (DOE) Energy Star® program. Great attention to detail was given to the selection of products used in the home to ensure a focus on sustainability and energy efficiency.

The fire sprinkler system selected was fully comprised of Spears® FlameGuard® CPVC Fire Sprinkler Products. From an environmental standpoint, a CPVC fire sprinkler system offers lower energy consumption to produce than other piping materials and favorable greenhouse gas emission ratings during production. Plus, CPVC fire sprinkler systems result in lower material and labor cost compared to PEX or metallic systems.

FlameGuard® CPVC offers superior fluid mechanics as well as low flame spread and smoke characteristics. CPVC will not support combustion and stops burning as soon as the ignition source is removed. CPVC also provides a cost advantage over the smaller internal diameter of PEX. Since PEX is copper tube size (CTS), pipe has to be upsized for suitable hydraulics due to the



much smaller internal diameter. CPVC Installation is fast, can be easily changed or added to in the field, and is significantly less expensive than steel when you take into account the material and labor savings.

The entire New American Home 2013 was sprinklered with 1630 feet of 1" FlameGuard® Pipe, 100 Tees and 80 Spears® TorqueSafe™ Head Adapters.

On Guard Fire Protection in Henderson was the fire sprinkler contractor on the project. "Spears® excels in providing a full range of products that most CPVC manufacturers don't have, from a broad range of fittings and pipe to valves and solvent cement. The flexibility of this product line makes it easier to install the fire sprinkler system as it was intended - in the most cost effective way.", said Bobby Tavakoli, president of On Guard Fire Protection. "With the years Spears® has spent in producing CPVC based piping and fittings, you feel confident that they know what they are doing and that they will stand by the product 100%."

Appendix G - Select Product Case Studies



Kris Oesterling, Project Manager for Las Vegas home builder, Blue Heron, a Certified Green Professional says, "I am very pleased with the decision of our fire sprinkler contractor, On Guard Fire Protection, to use Spears® FlameGuard® CPVC Fire Sprinkler Products on their Blue Heron projects. The wide variety of products available in

As a result of these endeavors, Spears® has developed a true no-waste manufacturing process, not only in terms of raw material utilization but also in energy management. The result has been unparalleled conservation in both equipment operation and product distribution.



From the development of conservation-oriented processing to the continual introduction of innovative thermoplastic pipe, fittings and solvent cement products, Spears® has provided some of the most durable, corrosion resistant, long life and economical products available. These products are the foundation of greater sustainability in today's green building construction.

the FlameGuard® product line makes the installation of a quality fire sprinkler system a smooth and efficient operation. This helps me as a Project Manager to make sure projects are completed on time."

For over 40 years Spears® commitment to environmentally responsible products provides One Source Pipe, Fitting and Solvent Cement System Component benefits surpassed by none! Preservation of our earth's resources, reduction of waste and maximizing energy efficiency have been an integral part of Spears® Manufacturing Company's basic operations and commitment to the environment.

Type of Construction:
Residential — Single Family

Installation Type:
New

Green Building Achievement:
NGBS "Emerald" Level



Progressive Products From Spears® Innovation & Technology



SHOWCASE



Chobani Plant, USA

Chobani's brand new Twin Falls, Idaho facility was given Food Engineering's "Plant of the Year" award. The new one million square foot facility was built in an amazing 326 days. The 24" CPVC process waste system was designed to handle peak flows of 8,700 gpm.

Initially, stainless steel and fiberglass piping for the waste drainage were under consideration. Both of the products however had minimum lead times for delivery from 10 to 14 weeks. The decision was made to use Spears® LabWaste™ products. Spears® Manufacturing Company was able to provide most of the products needed on a next day basis, and fabricated manifolds and spool pieces within a consistent two week delivery schedule.

For this project, Spears® Manufacturing Company provided over 5 miles of pipe ranging from sizes 2" to 24". The product provided included LabWaste™ CPVC pipe & fittings, as well as custom Schedule 80 CPVC manifolds and spool fittings. The installation includes more than 20,000' of LabWaste™ pipe, over 6,500 LabWaste™ fittings, 1,215' of Schedule 80 CPVC pipe for the manifolds and more than 245 gallons of solvent cement and primer.

LabWaste™



© Copyright 2014 Spears® Manufacturing Company. All Rights Reserved. Printed in the United States of America 02/14.

SCHOB-2-0214





“Chobani Yogurt’s 1,000,000 sq ft 2012 Food Plant of the Year located in Twin Falls Idaho was a design build project completed in just 326 days. In addition to having a fast track schedule, the 5 miles of underground Spears® LabWaste™ pipe ranging in sizes from 2” – 24” at depths of 2’ – 14’ had to withstand pH ranges of 4-12 and temperature ranges of 50°F to 200°F. This in itself would be a challenge but the lengths and depths coupled with the temperature range added special challenges. With branches ranging from 300 – 500 feet in length, Chobani along with Shambaugh & Son worked together with Spears® Manufacturing Co. to develop a layout that would accommodate expansion and contraction without compromising the system integrity. Increased wall thickness where required is able to handle the static pressure of backfill at high temperatures. Spears® Manufacturing Co., Shambaugh & Son Engineering and Ferguson worked together to develop project pricing and expedited deliveries.”

Robert Keplinger
West Coast Operations Manager
Shambaugh & Son



“It was the tri-fecta of the industrial world”. Manufacturer, Supplier, Mechanical, coming together as a team to accomplish the impossible. Communication was key to the successful completion. Engineering from all sides had many sleepless nights but with Spears® experience and outside the box thinking our goals were attainable. We look forward to future projects and bringing the team together again.

Sincerely,
Joe Cristofano
FEI- National Accounts Manager

SHOWCASE





SHOWCASE



The Palm Jumeirah, Dubai UAE

Atlantis, The Palm Resort and Waterpark located on the crown of The Palm Jumeirah. The resort has over 1500 rooms with a 42 acre water park and over 20 dining restaurants. the water park includes Aquaventure Waterpark, Dolphin Bay and The Lost Chambers Aquarium.

In order to circulate the large volumes of water, eight massive water pump stations (Insert Picture Below) were constructed implementing Spears® valves and fittings.

For this colossal project; Spears® Manufacturing products were selected for the task, the products included Spears® PVC Valves, Polypropylene Valves and Schedule 80 PVC Fittings. The valves and fittings supplied ranged from sizes 1/2" to 24", which included Actuated Electric and Pneumatic Butterfly Valves, Tandem Diverter Butterfly Valves, Industrial Swing Check Valves, Butterfly Check Valves, Industrial 2000 Ball Valves and Globe Valves.





SHOWCASE



Information

Status	Completed
Groundbreaking	September 21, 2004
Est. Completion	June 30, 2009
Opening	January 4, 2010

Height

Antenna/Spire	829.8 m (2,722 ft)
Roof	828 m (2,717 ft)
Top Floor	584.5 m (1,918 ft)

Technical Details

Floor Count	163 Floors, plus 46 maintenance levels in the spire and 2 parking levels in the basement
Floor Area	309,473 m (3,331,100 sq ft)

Companies

Architect	SOM
Contractor	Samsung Constructions / BESIX / Arabtec
Developer	Emaar



The Burj Khalifa Tower, Dubai UAE

Spears® Manufacturing Company, the world's leading manufacturer of PVC/CPVC products, was chosen to supply piping systems for the world's tallest building - The Burj Khalifa Tower. Spears® is known for their dedication to clients, customers and the best in product support. Spears® ability to produce mass amounts of product for large scale projects equals significant cost savings.

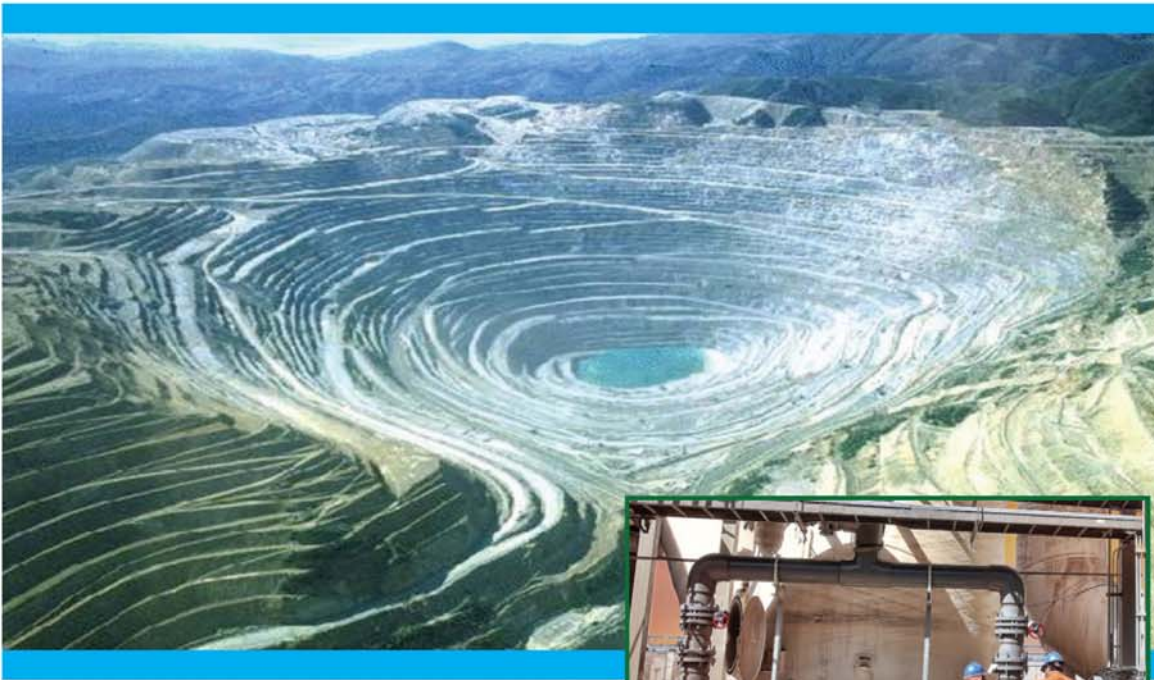
Spears® Manufacturing Company provided more than 2.5 million dollars worth of product for the construction of potable water and drainage systems in The Burj Khalifa Tower. There were more than 250,000 fittings and valves installed for this project; and it took approximately 10 storage containers to move the product. This included Spears® DWV, Schedule 80 PVC/CPVC and Valves.





Spears® Thermoplastic Piping Products for Mining & Mineral Processing Applications

MMPA-2-0314



The Mining Industry Depends on Spears® Thermoplastic PVC & CPVC piping products to provide long-lasting solutions in the Most Demanding Mining Applications.

Spears® Thermoplastic Products Feature

- ✓ **Outstanding Chemical Resistance**
Non pH-limited PVC & CPVC materials resist most aliphatic hydrocarbons, acids, bases and salts.
- ✓ **Superior Corrosion Resistance**
Thermoplastic materials are not affected by corrosive environments and maintain interior wall smoothness throughout 50+ year service life.
- ✓ **Unmatched Abrasion Resistance**
Exhibits excellent resistance in abrasive environments.
- ✓ **High Temperature Resistance**
Exhibits high temperature resistance in aggressive environments.



PVC Schedule 80 Piping Products



Spears® PVC & CPVC piping products provide time-saving easy installation and allow for effortless system expansion when required.



Mining Applications Include:

- Ion Exchange
- Process Cooling Water
- Dosing
- Reverse Osmosis
- Chemical Process
- Flocculation
- Drainage
- Chemical Neutralization
- Dilution
- Electrowinning



PVC & CPVC Valves

CPVC Schedule 40 & 80 Piping Products



CPVC Corrosive Waste Drainage Systems

Simply the Best!

Progressive Products From Spears® Innovation & Technology



SHOWCASE



Information

Groundbreaking	January 1, 1992
Completed	April 1, 1994
Inaugurated	August 1, 1999

Height

Architectural	451.9 m (1,483 ft)
Roof	378.6 m (1,242 ft)
Top Floor	375 m (1,230 ft)

Technical Details

Floor Count	88 (+5 basement floors)
Floor Area	309,473 m (3,331,100 sq ft)
Lifts/Elevators	78

Companies

Architect	César Pelli
Contractor	Tower 1: Hazama Corporation Tower 2: Samsung Engineering & Construction and Kukdong Engineering & Construction
Developer	KLCC Holdings Sdn Bhd

Petronas Towers (Kuala Lumpur, Malaysia)

Spears® Manufacturing Company, the world's largest PVC/CPVC manufacturer, was chosen to provide products for the world's tallest twin buildings, known as the "Petronas Towers." Spears® Manufacturing is known for their dedication to their clients, their Customer and Product support as well as their ability to produce mass amounts of product for large scale projects which equal cost savings.

Spears® Manufacturing Company proudly provided Schedule 80 PVC/CPVC Fittings and Valves for this immense building project.





CPVC Plastic Piping Products for Marine & Offshore Applications

Featuring American Bureau of Shipping (ABS) Type Approved Schedule 40 and Schedule 80 Pipe, Fittings & Valves, Plus Spears® Patented LabWaste™ CPVC Corrosive Waste Drainage System - The Ultimate in Corrosion Resistance, Light Weight & Ease of Installation.



Spears® manufactures the broadest lines of CPVC Fittings, Valves and Pipe available. CPVC is most appropriate for Marine and Offshore Installations.

- Weight Saving Installation/Fuel Saving & More Profits
- Fully Recyclable for Environmentally Sensitive Designs
- No Marine Environment or Sea Water Corrosion
- Ease of Repair & System Expansion
- Chemical & Industrial Processing
- Waste Water Treatment & Handling
- Offshore & Marine DWV Applications
- IMO A.653 Tested



LabWaste™ CPVC is excellent for all DWV applications on sea or land. This CPVC application is so unique that it was awarded a U.S. Patent.

Spears® Corrosion Resistant CPVC for . . .

- | | |
|--|---|
| <ul style="list-style-type: none"> • Potable Water Systems - Certified by NSF® • Ballast & Wastewater Treatment Systems • Black Water & Grey Water Systems • Pressure, Vacuum & Drainage Service | <ul style="list-style-type: none"> • Sea Water Desalinization • Low Flame & Smoke Rating • Longer Life Span for Lower Life-Cycle Costs than Metal Piping |
|--|---|





Contact Spears® Technical Services for additional details or information.



Progressive Products From Spears® Innovation & Technology