

NATURAL STRUCTURES SPECIFICATIONS

FIBERGLASS WATERSLIDES 32" CLOSED, 36" OPEN, 42" OPEN FLUMES INCLUDES TOWER, DROP, SPEED, & HILLSIDE APPLICATIONS UP TO 32' HIGH SLIDES ARE DESIGNED FOR COMMERCIAL USE IN PUBLIC AREAS

Natural Structures Water Slides meet or exceeds:

The Code of Federal Regulations, Commercial Practices, Chapter 16: Part 1207, as produced by the Consumer Product Safety Act Regulations in Washington, DC 20207

The Federal Register, Consumer Product Safety Commission, Part II, Swimming Pool Slides, January 19, 1976.

"World Water Park Association Considerations for Operating Safety", published by the World Water Park Association, 7474 Village Drive, Prairie Village, KS 66208

"Suggested Health & Safety Guidelines for Recreational Water Slide Flumes" US Dept. of Health & Human Services, Public Health Services, Center for Disease Control

- A. **Deluxe Series:** The following is powder-coated stainless steel: Tower guardrail, stair handrail, flume plates, flume front leg supports, short vertical flume support that connects to the tower arm, platform angle bracing, tower and flume post base plates.

The 6"x 6" tower posts and 1/4" x 14" round flume post are mild steel. All stainless steel is type 304. Flat bar is A240. Pipe is grade A312. Tubing is grade A778 or A554. Finish is listed below.

- B. **North Star Series:** All posts, walls, guardrails, flume plates, and flume leg supports are mild steel. The tower & flume post base plates are stainless steel. Finish is listed below. Flat bar steel grade A36. Pipe is steel grade A53 or A120. Tubing is grade A500.

C. GENERAL SPECIFICATIONS

1. **POSTS:** Tower posts are 3/16" x 6" x 6" square steel with welded tabs and end caps. Flume posts are 1/4" wall by 14" round steel with welded flume support tabs. Single & double flume support posts vary due to slide width & terrain. The base plates are 3/8" x 10" x 10", 1/2" x 11 1/2" x 11 1/2" square and 3/8" x 20 1/2" OD round stainless steel. Hillside posts will vary from the 14" on center post listed above to independent supports for a single seam. These supports will be 2 3/8" - 4 1/2" OD pipe.
2. **SLIDE FLUME:**
 - A. **Gel-Coat:** The gel coat is UV stabilized inside and out. It is a high quality isophatic polyester. The interior surface is 20-24 mils thick. The exterior is 20 mils thick. The gel coat adheres to the following specifications: ASTM D-638-80; ASTM 2538-75.
 - B. **Resin:** The resin is Thixotropic promoted low profile polyester resin. The resin adheres to the following specifications: ASTM D-638-80; ASTM D-790-80 and ASTM D-696-80.
 - C. **Structure:** The slide flume is 1/4" thick or greater with a minimum weight of 32 oz per square foot. The flanges are "L" type and 1/4" thick or greater with a 4" length extended from the slide path. The slide curves have a one piece continuous molded extension on the outside curves.
3. **SLIDE SUPPORTS:**

SUPPORT ARM from flume post is 4" x 4" x 1/8" Square tube or larger as required by engineer with a 2 x 2 x 3/16 angles. Brace with 4 1/2" OD Pipe for low profile styles. They are secured with two 3/4" stainless steel hex bolts for flumes up to 36" wide.

FLUME SUPPORT SADDLE is 3/16" thick x 18" long curved plate secured with 3/8" stainless steel bolts, flat washers, lock nut on a 5" or less spacing. It is secured to the support arm with 3/4" stainless steel bolts for flumes up to 36" wide.

4. **HARDWARE FASTENERS:** for flume seams are 3/8" x 1 3/4" and 2" #304 stainless steel hex bolt, washer and lock nuts. Anchor bolts are 1/2" x 3 3/4" concrete wedge anchor, or 5/8" and up to 1 1/2" stainless steel epoxy anchor bolts with various lengths as required by the engineer. Each plan will show bolt specifications. All tower and stair hardware is stainless steel except where structural integrity requires a galvanized bolt, washer, and lock nut (stainless steel A304). All 3/8" stainless steel bolts have a minimum yield of 30,000 psi and a tensile strength of 90,000 psi. Note: for pools with tile or other non-structural top surfaces, call Natural Structures.
5. **STAIRS (7/11)** are manufactured from .100 5052-H32 aluminum sheet. Stair side angles are 1/4" x 1 11/16" x 6 11/16" 6061 aluminum angle. Stairs are factory assembled in a single piece and ready for handrails. The stairs have 42" guardrails. The guardrails are 1.31 " O.D. steel pipe with 5/8" O.D. 16-gauge uprights for the Deluxe & North Star Series and 5/8" solid bar for hot dipped galvanized applications. Stair and tower rungs are spaced for a 4" or less opening. Stairs are textured for safety. Risers are enclosed. Ends are slotted for drainage with additional drain holes in the center of stairway. The 7/11 stairs are 7" rise, 11" tread, and 36" wide. Also available 48", & 60" wide.
6. **VERTICAL STEEL RAILINGS** are 5/8" O.D. 16-gauge uprights welded to 1 5/8" OD x .093" wall. Rungs are spaced for a 4" or less opening. Railings are 42" high for the landings. Towers 19' 0" and above have 54" high platform guardrails. A tower covering may be necessary on high towers, and would be priced accordingly.
7. **DECKS** are 6' x 6', 8' x 8', 8' x 16', 12' x 16', 12' x 20', and other sizes as required. Deck size will vary on the multi-flume slide platforms. The deck (walking surface) is slip resistant and fabricated of 1/8" 5052-H32 aluminum plate formed into planks 10 5/8" wide x 3" tall. Planks are textured for slip resistance and safety. The planks are secured to a 5 x 3/16 "Z" member angle steel frame. Note: larger decks will use 5 x 1/4 or 6 x 1/4 "Z" members. Angles sizes may increase with larger decks, such as multi flume applications.
8. **FINISH:**
Deluxe Series: All stainless steel components are polyester powder coated 3 -5 mils for color coordination. Tower posts, flume posts, and flume support arms are powder coated over a chemical resistant Aqua-Kote* under coating for a total coating thickness of approximately 8 mils thick.

North Star Series: Mild steel components are polyester powder coating over a chemical resistant Aqua-Kote for a total coating of approximately 8 mils thick. **OPTION #1:** Hot dipped galvanized mild steel. **OPTION #2:** Hot dipped galvanized with polyester powder coat.
9. **Walking Surfaces:** All walking surfaces are 5052-H32 aluminum. This consists of stairs treads, landing treads, & tower treads. They are textured and Aqua-Plast coated which is a copolymer base thermoplastic coating designed for maximum mechanical performance, impact resistance and ultra violet (UV) stability. This is a non-skid protective coating.
10. **WATER RECOMMENDATION:** Depending on the model, recommended water flow will range from 150 to 1200 gallons per minute. Refer to the water specifications for each individual slide.
11. **FOOTINGS:** Requirements vary with each model and are determined by the tower height, flume height, slide configuration, soil compaction and wind load. Anchor bolts are 1/2" x 3 3/4" concrete wedge anchors or 5/8" and up to 1 1/2" stainless steel rod with varying lengths as required by the engineer. Epoxy is Simpson "Set" 22.

NOTE: *Aqua-Kote is a one-part, heat curable, thermosetting epoxy coating designed for corrosion protection of steel in harsh chemical and seawater environments. Polyester powder coating is applied over the Aqua-Kote for color coordination and ultra-violet protection.

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