5/8" Stainless Steel All-thread Mast Overview

325 Beth Bartel February 18, 2010 Antenna Masts and Monument Pins 3900

5/8" Stainless Steel All-thread Mast

Back to comparison table	Mount Commonly Used	Stability	Cost	Install Time	Labor	Substrate	
	 Cup with brass adapter	 med-high	$30	 1 hr	 1	BR, R	

The 5/8" stainless steel all-thread mast is the simplest of the monumentation supported by UNAVCO. The monument consists of one length of 5/8" stainless steel all-thread, which can be cut to size in the field. The mast is set directly into a hard substrate. The mast is installed as close to vertical as possible; a stainless steel cup with a threaded brass adapter is generally used for the antenna mount, as shown here. The cup does not allow for precise leveling but does allow for the antenna to be oriented to north. These monuments are used throughout the semi-permanent GNSS network in Bangladesh and in Calabria, Italy (both M. Steckler, Lamont-Doherty Earth Observatory).



GNSS site in the Bangladesh network.

Pros

- Inexpensive (e.g. ~$30 for the all-thread, $50 for the mount)
- Can be installed with a battery-powered drill
- Small footprint, low-profile
- Short installation time (<1 hr)
- Materials readily available; no custom machining necessary for the monument
- Can be installed on a rooftop or other stone or cement structure

Cons

- Can only be installed in solid material

Design and Construction

A battery-powered drill is all that is needed for installation of the mast.

Documents

None.

Installation Photos



Mladen Nedimovic of Dalhousie University and Michael Steckler of the Lamont-Doherty Earth

Observatory install a monument on the roof of a church in the Calabria region of Italy.

Approximate Cost

$30 (not including epoxy or cement)

This cost is for the monumentation only; the antenna mount is not included.

Materials

- custom length of 5/8" stainless steel all-thread
- epoxy or quick-setting, expansive concrete
- stainless steel nut and washer for locking position of the antenna or antenna mount
- Loctite or other glue for threads (optional)

Tools

- battery-powered drill
- tube to blow rock flour out of the hole
- level
- compass

Mount Commonly Used



A 5/8" threaded leveling mount can be used, but we commonly use a simple non-leveling mount consisting of a stainless steel cup holding a brass adapter. The antenna is screwed onto the brass adapter and can be rotated to north. The adapter is then held in place in the cup with a set screw. The monument itself is installed as close to vertical as possible.

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