



**EL NIÑO PREPAREDNESS**  
**DIY SANDBAGS FOR FLOODING**

# FLOOD PREPARATION

El Niño is a weather phenomenon related to unusually warm water in the Pacific Ocean, triggering greater than usual rainfall as well as storm clusters that can saturate the ground and produce flash flooding.

The County of Orange is responsible for all large flood control channels around the county, as well as street gutters and catch basins in the unincorporated areas and the cities of Mission Viejo, Lake Forest and Dana Point. All other cities maintain their own street gutters and catch basins.

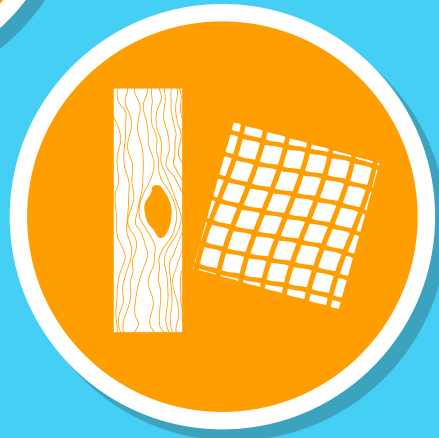
Dangers from El Niño conditions are real: In 1982-83, El Niño storms killed 36 people and caused \$1.2 billion in damages when coastal Orange County areas flooded and mudslides destroyed canyon homes. In December 1997, the most severe storm ever measured in Orange County hit, devastating parts of Laguna Beach, Lake Forest and Irvine, and around the I-5 Freeway. More than 7 inches of rain fell in parts of south Orange County in one day.

Residents are encouraged to get ready NOW for expected winter rains and potential flooding:

Be prepared at home and away!  
Be alert for potential dangers!  
Stay out of rivers, flood channels and storm drains!



# SANDBAGS



- **ARE NOT EXPENSIVE**  
Sandbags do not require a large investment for protection against flooding.
- **CAN BE INSTALLED WITH HOUSEHOLD TOOLS**  
No special equipment required for installation!
- **CONSIST OF READILY AVAILABLE BUILDING MATERIALS**  
All materials can be purchased at your local hardware store.

# GENERAL RULES

EACH SITUATION DIFFERS; HOWEVER, BASIC RULES CAN BE FOLLOWED IN ALL CASES INVOLVING FLOOD WATER AND DEBRIS

## NEVER

underestimate the power of flood waters or debris flows.

## DIRECT

flood water and debris flows away from structures and improvements.

## AVOID

trying to confine the flows more than is absolutely required.

## CLEAR

a path for the debris.

## USE

your house or building as a deflector if necessary.

## ALWAYS

place protection to deflect flows, not to stop them.

## DEBRIS

will often enter a building through windows...board them up!

## PROTECT

your most valuable property first...your home.

## CONSIDER

what time and money are available to protect other property.

## INSTALL

more permanent measures to protect your home.

## WORK

with adjacent affected property owners.

## PREPARE

to sacrifice the use of portions of your property for protection.

## DON'T

alter drainage patterns that could worsen conditions for your neighbors.

THE FOLLOWING PAGES COVER TYPICAL INSTALLATIONS OF SANDBAGS, TIMBER AND PLYWOOD TO PROTECT BUILDINGS AND GROUNDS.

# FILLING SANDBAGS

**SANDBAGS, WHEN PROPERLY FILLED AND PLACED, WILL REDIRECT STORM AND DEBRIS FLOWS AWAY FROM PROPERTY IMPROVEMENTS.**

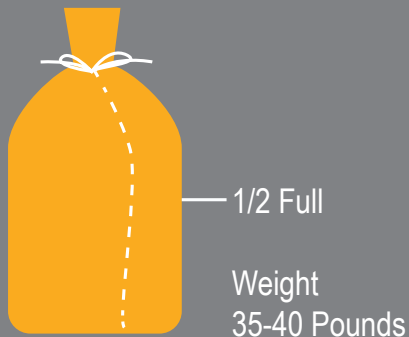
Fill sandbags one-half full. This keeps the bag from getting too heavy and allows for a good seal when stacked.

Two-person operation. Be sure to wear gloves. One person should hold the bag while the other fills.

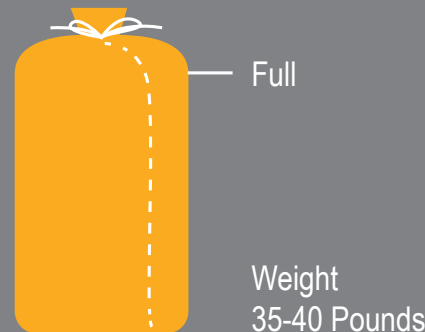
For a more durable bag, mix 10 parts sand and one part cement. Light water sprinkling is recommended after bags are placed. Use Burlap only.



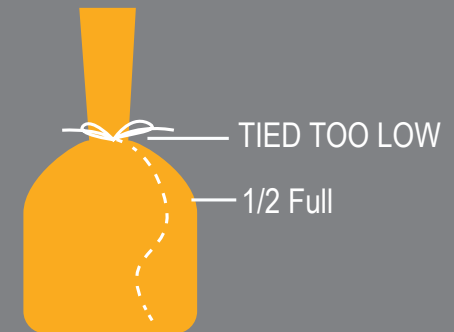
**RIGHT**



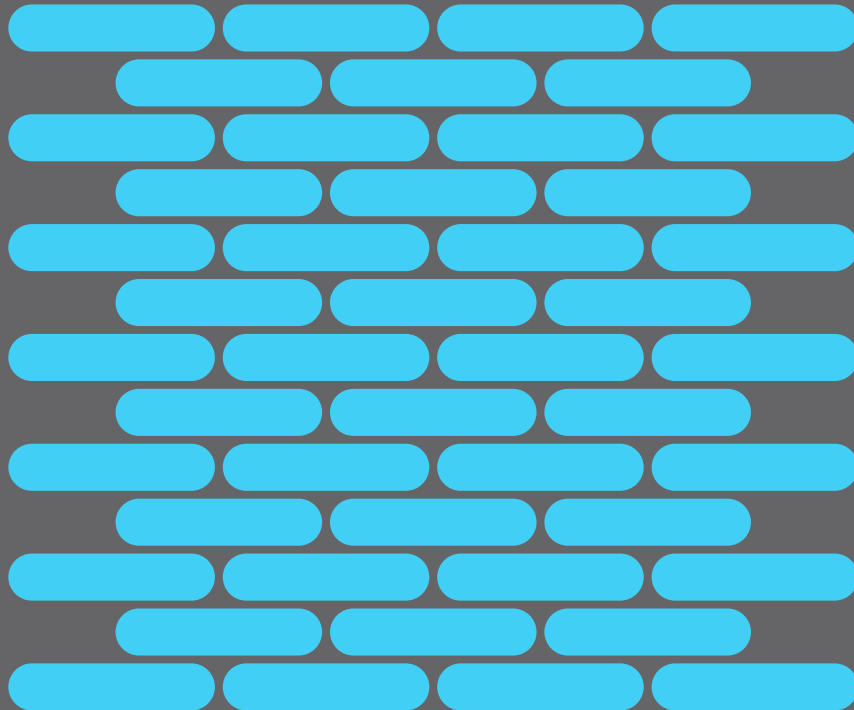
**WRONG**



**WRONG**



# PLACING SANDBAGS



Fold the top of sandbag down and rest the bag on its folded top.

Place bags with the folded top toward the upstream to prevent bags opening due to water pressure.

Overlap sandbags when placing them for the best overall seal and strength against flood waters.

# LIMITATIONS

- **SANDBAGS WILL NOT SEAL OUT WATER.**
- **SANDBAGS DETORIORATE WHEN EXPOSED FOR SEVERAL MONTHS TO CONTINUED WETTING AND DRYING.**
- **SANDBAGS ARE BASICALLY FOR LOW-FLOW PROTECTION (UP TO TWO FEET). PROTECTION FROM HIGHER FLOWS REQUIRES A MORE PERMANENT TYPE OF STRUCTURE.**

**BE EQUIPPED AND PREPARED FOR ALL THINGS EL NIÑO.  
FOR MORE INFORMATION, VISIT [OCELNINO.COM](http://OCELNINO.COM)**