

# Tuff-N-Nuff®

## Rockshield for Pipeline Coating Protection

Tuff-N-Nuff® is a rockshield comprised of small diameter (approximately 0.050") strands of flexible PVC which form a porous, non-woven mat. These strands are bonded to each other in a controlled random pattern during production. Tuff-N-Nuff® protects pipeline coatings from direct impact during backfill operations. It also provides long-term protection by keeping hard objects in the backfill from coming into contact with the pipeline coating. Tuff-N-Nuff® also protects the pipeline coating from these abrasive objects as lateral and longitudinal movements occur once the pipeline is placed into service. In addition, Tuff-N-Nuff® does not shield cathodic protection being supplied to pipelines.

- Very durable with exhibits excellent performance properties
- Safety yellow color helps to identify the pipeline
- Lightweight
- Easy to Install
- Cost Efficient
- Non-shielding for Cathodic protection
- Product sold specifically as a rockshield for over 30 years
- Available in Custom Sizes



**ROLLS:** Sized to match any pipeline diameter up to 22".

Supplied as 30' rolls, custom lengths available on request.

**PADS:** Sized to match 24" and up in pipeline diameter sizes.

Supplied as 6' wide pads.

Property	Test Method	Typical Results*
Impact Resistance	ASTM G13 (Modified)	No failure @ 6" rock <sup>1</sup>
Puncture Strength	ASTM D6241 (Modified)	150 lbs
Tear Strength	ASTM D4533	150 lbs/in
Compressive Strength	ASTM D1621	2.20 lbs/in <sup>2</sup> @ 10% deflection
Diaphragm Burst	ASTM D3787	150 lbs
Abrasion Resistance	ASTM D4886	75 psi
Grab Strength	ASTM D4632	99 lbs & 100% elongation at break
Low Temp Brittleness	ASTM D746	>-65°F (exceeded chamber capability)
Bacteria Resistance	ASTM G22	No Growth
Density	ASTM D792	0.860 (Minimum)
Cathodic Protection	Custom	No inhibiting effect
Melt Temperature	Custom	320°F

<sup>1</sup>Test modified to include rocks which progress in size from 1 1/2", 3", 4" and 6", 10 drops each. Each drop consisted of released 50+ lbs of stone from a height of 6' onto a fusion bonded epoxy coated steel plate protected by Tuff-N-Nuff. The FBE coated steel plate is visually inspected for holidays after each drop.

\*Results may differ based upon statistical variations depending upon equipment, temperature, application methods, test methods, and actual site conditions.