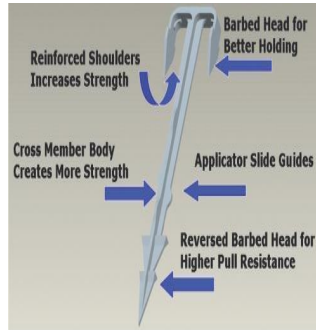
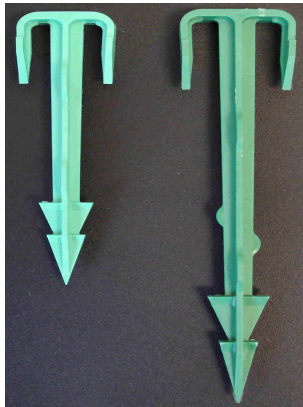


# E-Staple®

A New, 100% Biodegradable Anchoring Staple and installation system



American Excelsior Company offers E-Staple®, a 100% biodegradable turf staple, which is not just another turf staple. E-Staple is the result of years of research and development that has produced the most unique turf staples available today.

## Typical Applications

- Environmentally sensitive projects
- Mowing applications
- Use with Curlex® NetFree™ for a 100% biodegradable project
- Airport construction
- Wetland and irrigation areas
- Coastal projects
- Golf course construction

## Biodegradation / Certifications

- E-Staples biodegrade by a surface attack mechanism triggered by soil microbes naturally present in the soil.
- E-Staples will biodegrade faster in more fertile soil because that means there are more microbes breaking down the material.
- E-Staples biodegrade in cold (43 °F) to hot (180 °F) conditions and do not require a pre-hydrolytic reduction in molecular weight for degradation to begin.
- Pre-hydrolytic reduction generally requires a hot (140 °F – 149 °F) and moist composting step, which is not a common condition for soils where turf staples are used.
- E-Staples will biodegrade completely from the soil in 8-24 months depending on site conditions.
- 100% biodegradation from bacteria in accordance to ASTM 5338 and ASTM 5271

## Material Characteristics

- E-Staple's unique composition sets it apart from other 100% biodegradable staples.
- E-Staples are comprised of a natural plastic that originates from materials that are abundantly grown in the United States.
- E-Staple composition is Polyhydroxyalkanoate (PHA) plastic that is made from plant sugars and oils. "Natural plastics" eliminate the use of petroleum-based materials, which ultimately helps reduce our dependency on oil.
- This innovative composition produces unique and unmatched physical and chemical features and benefits.
- All of these features and benefits, along with the independent pull out testing results vs. other turf staples, are detailed in the E-Staple TechNote.

## Stapler Features

- Greatly expedites installation of 4 and 6 inch E-STAPLES
- Light weight and easy to use
- Should be used for best results in hard soils



## Installation / Packaging

- E-Staples may be installed by hand; however, the E-Stapler™ mechanical applicator greatly expedites E-Staples installation and should be used for best results in hard soils.
- Available in 4 and 6-inch lengths
- Carton of 500 or 1,000



Disclaimer: E-Staple is a 100% biodegradable turf staple used to anchor erosion control blankets and sod. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in erosion control and re-vegetation applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety or suitability of using the E-Staple, or for damages occurring in connection with the use of any E-Staple product whether or not made by AEC or its affiliates, except as separately and specifically made in writing.