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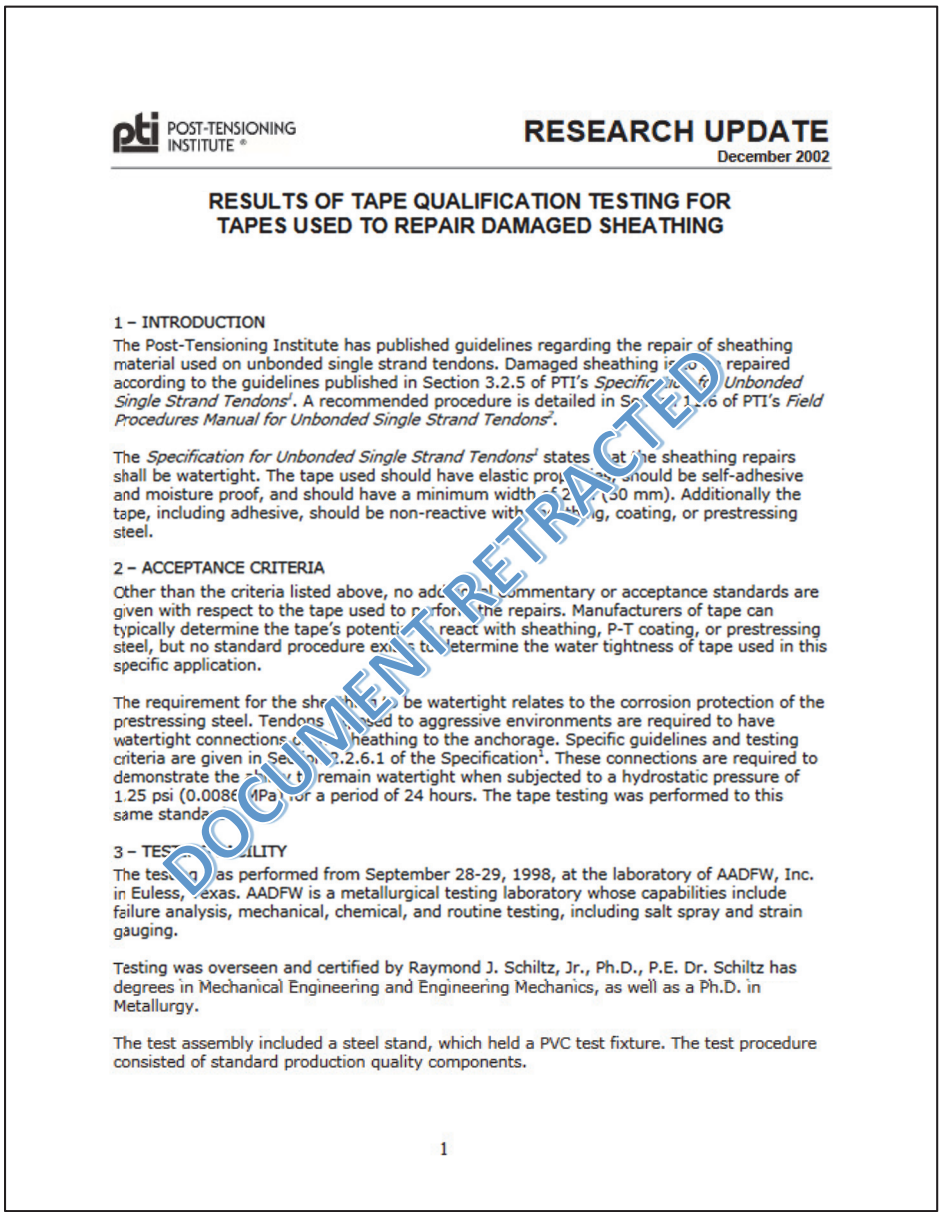
The 2002 Research update titled, “Results of Tape Qualification Testing for Tapes used to Repair Damaged Sheathing,” has been retracted. The products listed in the study are no longer commercially available.

Tape used for repairs shall meet the requirements of PTI M10.2-17 Section 2.4.3.2 and:

- Be self-adhesive and moisture proof
- Be nonreactive with sheathing, PT coating, or prestressing steel
- Have elastic properties
- Have a minimum width of 2 in. (50 mm)
- Have a contrasting color to the tendon sheathing



POST-TENSIONING INSTITUTE ®

RESEARCH UPDATE
December 2002

RESULTS OF TAPE QUALIFICATION TESTING FOR TAPES USED TO REPAIR DAMAGED SHEATHING

1 – INTRODUCTION

The Post-Tensioning Institute has published guidelines regarding the repair of sheathing material used on unbonded single strand tendons. Damaged sheathing is to be repaired according to the guidelines published in Section 3.2.5 of PTI's *Specification for Unbonded Single Strand Tendons*[1]. A recommended procedure is detailed in Section 1.6 of PTI's *Field Procedures Manual for Unbonded Single Strand Tendons*[2].

The *Specification for Unbonded Single Strand Tendons*[1] states that the sheathing repairs shall be watertight. The tape used should have elastic properties, should be self-adhesive and moisture proof, and should have a minimum width of 2 in. (50 mm). Additionally the tape, including adhesive, should be non-reactive with sheathing, coating, or prestressing steel.

2 – ACCEPTANCE CRITERIA

Other than the criteria listed above, no additional commentary or acceptance standards are given with respect to the tape used to perform the repairs. Manufacturers of tape can typically determine the tape's potential to react with sheathing, P-T coating, or prestressing steel, but no standard procedure exists to determine the water tightness of tape used in this specific application.

The requirement for the sheathing to be watertight relates to the corrosion protection of the prestressing steel. Tendons exposed to aggressive environments are required to have watertight connections from the sheathing to the anchorage. Specific guidelines and testing criteria are given in Section 4.2.6.1 of the Specification[1]. These connections are required to demonstrate the ability to remain watertight when subjected to a hydrostatic pressure of 1.25 psi (0.0086 MPa) for a period of 24 hours. The tape testing was performed to this same standard.

3 – TEST FACILITY

The testing was performed from September 28-29, 1998, at the laboratory of AADFW, Inc. in Euless, Texas. AADFW is a metallurgical testing laboratory whose capabilities include failure analysis, mechanical, chemical, and routine testing, including salt spray and strain gauging.

Testing was overseen and certified by Raymond J. Schiltz, Jr., Ph.D., P.E. Dr. Schiltz has degrees in Mechanical Engineering and Engineering Mechanics, as well as a Ph.D. in Metallurgy.

The test assembly included a steel stand, which held a PVC test fixture. The test procedure consisted of standard production quality components.

1