



March 21, 2003

Mr. Vince Bloom
Chemical Engineer
Ductmate Industries, Inc.
1502 Industrial Drive
E. Monongahela, PA 15063

Re: Ductmate Clutcher Wire Rope System

Dear Mr. Bloom:

The SMACNA Testing & Research Institute (STRI) verifies in the attached Test Report, the Ductmate Clutcher Wire Rope System CL10 & CL20 as submitted and tested to be acceptable alternatives to the duct hanger systems prescribed in the SMACNA HVAC Duct Construction Standards (HVAC-DCS), 2nd Edition 1995, Chapter 4, Tables 4-1, 4-1M, 4-2 and 4-2M subject to the conditions in the attached Test Report.

Sincerely,

Dennis M. Bradshaw
Executive Director

DMB/dd

Enclosure

008 Bloom_Ductmate Clutcher Approval

SMACNA TESTING & RESEARCH INSTITUTE TEST REPORT

TEST & VERIFICATION REPORT ON DUCTMATE CLUTCHER WIRE ROPE SYSTEM

The SMACNA Testing & Research Institute (STRI) verifies Ductmate Clutcher Wire Rope System CL10 & CL20 as submitted and described below to be acceptable alternatives to the duct hanger systems prescribed in the HVAC Duct Construction Standards (HVAC-DCS), 2nd Edition 1995, Chapter 4, Tables 4-1, 4-1M, 4-2 and 4-2M subject to the following conditions and limitations:

1. Consistent with the HVAC-DCS requirements, upper attachment of the system directly to structures (without another device transferring the load between the wire rope and structure) shall have an allowable load of not more than one-fourth of the wire rope system failure load.
2. Lower attachments, such as illustrated in HVAC-DCS Figure 4-4, shall have a minimum safety factor of two and shall not be used in a manner that would deform the duct shape or cause excessive concentrated loads on ducting.

With respect to HVAC-DCS Figure 4-4, Ductmate Clutcher Wire Rope System CL10 & CL20 may be adapted to any of the illustrated support configurations except the two-tier trapeze method in the lower right. This adaptation also applies to the strut channel support in Figure 4-5.

Wire rope support of trapeze bars for oval duct suspension relative to HVAC-DCS specification S3.18 is acceptable.

Wire rope passed continuously under round and rectangular duct (with both ends attached overhead) is acceptable provided that duct shape is retained and points of contact with the duct are not overstressed. Use of stress distribution saddles shall be prescribed as necessary.

3. The HVAC-DCS Table 4-1 maximum hanger spacing of 10 feet and Table 4-2 maximum spacing of 12 feet shall be maintained (and decreased as necessary to conform to Ductmate Clutcher Wire Rope System CL10 & CL20 working load limits).

Since Chapter 4 of the HVAC-DCS has prescribed uses and limits on duct size for single wire supports and the Ductmate Clutcher Wire Rope System CL10 & CL20 uses wire rope that have larger load capacity, use is not restricted to the HVAC-DCS diametrical limits for single wires.

4. When Ductmate Industries allows its hanger wire to be in a non-vertical orientation, it shall, in accordance with accepted engineering practice, provide users with adjustments to its working loads and, as necessary to conform to manufacturers recommendations, approve the method of transfer of loadings to supporting and supported members. This stipulation shall not be construed as preempting any duty of an installer to obtain approval of the support system by an appropriate authority prior to making the installation. The SMACNA HVAC-DCS does not specifically provide for non-vertical hanger systems.
5. Criteria for use of Ductmate Clutcher Wire Rope System CL10 & CL20 for support of risers is not included in this verification.

Ductmate Industries submitted their “Clutcher” Wire Rope System which consisted of:

1. A “system” with the following components: a galvanized steel wire rope, a preformed loop created and maintained thereon by a manufacturer supplied CL10 & CL20 “Clutcher” (casing, springs, pawls, and pins) and an attachable loop fixing metal grip.
2. Each system was supplied with suitably matched, compatible load rated components with load rating performance data conducted by an accredited testing laboratory.

The SMACNA Testing & Research Institute conducted a comprehensive evaluation of the submittal as an acceptable alternative for use with the SMACNA HVAC Duct Construction Standard – Metal and Flexible, 2nd Edition 1995. This analysis included: minimum and maximum working load ranges that will prevent slip and separation of components of the systems; breaking strength of the wire rope; load test results for wire rope systems and failure load tests.