ASTM Committee News

News of ASTM committees on composites will appear each issue. Also, dates of conferences and persons to contact are listed in the MEETING CALENDAR ON COMPOSITES section.

The scope of the ASTM D-30 Committee on High Modulus Fibers and Their Composites is "to develop standards, sponsor symposia, stimulate research, and exchange technical information pertaining to fibers having a Young's modulus greater than 20 GPa and composites fabricated from these fibers." The committee includes the following subcommittees: D-30.01, Editorial, Definitions, and Nomenclature; D-30.02, Research and Mechanics; D-30.03, Asbestos and Naturally Occurring Fibers; D-30.04, High Modulus Fibers; D-30.05, Organic Matrix Oriented Fibrous Composites; D-30.06, Inorganic Matrix Composites. Planning the symposia and discussing the research topics related to test methods are the responsibility of D-30.02, whereas writing of test standards is the responsibility of D-30.03, .04, .05, and .06.

Normally, there are two short committee meetings a year plus a technical specialists' conference, usually attached to one of the committee meetings. Topics of discussion in the committee meetings include future symposia as well as proposed test standards, such as the flexure test, the rail shear test, the sandwich beam compression test, and the off-axis tensile test.

James M. Whitney, Chairman, Committee D-30
Air Force Materials Laboratory
Wright-Patterson Air Force Base

Revision of Mil-Handbook-17

Under U.S. Army sponsorship, Mil-HDBK-17, Fiber Reinforced Plastics for Structural Applications, is being revised at PLASTEC. Many separate sections will be dedicated to the needs of established industries or disciplines, such as aircraft, automobiles, surface vehicles, and marine applications. Cooperative effort from industry in supplying data is encouraged. Contact Mr. Pete Sotir of AMMRC (617/923-3564) or Mr. Ski Slobodzinski of PLASTEC (201/328-4222) for additional information.

T. T. Chiao, Editor

Assessment of Composites Technology—1978

The National Science Foundation (NSF) has contracted with Argos Associates, Inc., of Winchester, MA, to assess the technology of the advanced composite materials. The report for Phase I of the contract (ERS 77-19467) has been completed by Robert Kaiser. Major findings are as follows:

1. Today, the principal fibers for advanced composites are graphites (250,000 to 400,000 lb/1977), aramid (500,000 lb/1977), and boron (32,000 lb/1977). Other fibers in various development stages are silicon carbide (150 lb/y), alumina (pilot plant), and boron nitride (exploratory).

2. Organic matrix composites dominate the technology. Carbon/carbon composites are sufficiently developed for specialty applications, such as missile components and aircraft brakes. Metal matrix composites are selectively used in aerospace applications of a developmental nature. Short-fiber-reinforced metals may find use in many specialty applications.

3. The current total consumption of advanced fibers is estimated around 800,000 lb/y, or 0.1% of the consumption of fiberglass. The dollar value is approximately $30 million. Advanced composites technology is still considered immature and large amounts of research and development funds are being allocated. NASA allocated $30 million for composites in FY 1977 alone; the total R&D funding from all sources currently is estimated to range from $100 to $200 million/y.

4. Advanced composites appear to be on the verge of significant growth in commercial use, if performance and cost criteria can be simultaneously achieved. Some of the potential volume applications are automobiles, trucks, aircraft, agricultural machinery, and pollution control equipment. The consumption of graphite and aramid fibers in 1990 is projected to be about $1 billion for about 25,000 to 100,000 t/y.

5. The commercialization of the advanced fibers and their use in composites will catalyze increased use of fiberglass in reinforced plastics, but will have little impact on other basic materials. Extensive use of advanced composites in transportation vehicles can contribute significantly to petroleum energy conservation.

T. T. Chiao, Editor