

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

DEVELOPMENT OF AN IMPROVED DIFFUSION BOARD MATERIAL

Project 2256

Contract No. DA18-108-405-CML-941

DA18-108-CML-6561

Order No. CP 1-405-4519

Report One

Monthly Progress Report

to

U. S. ARMY CHEMICAL CENTER PROCUREMENT AGENCY

Report Period: October 4, 1960 to October 28, 1960

November 21, 1960

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DEVELOPMENT OF AN IMPROVED DIFFUSION BOARD MATERIAL

BACKGROUND

This program has for its objective the development of an improved diffusion board material. The diffusion board presently being used was produced commercially on full-scale building board production equipment in a thickness of approximately 0.25 inches with a density of approximately 21 pounds per cubic foot, using groundwood and/or other high-yield pulp plus 25% of ASC charcoal. It satisfactorily meets the requirements of the Chemical Corps with respect to gas life, aerosol penetration, and diffusional characteristics, but is capable of indoor use only because it lacks weatherability and other physical properties necessary for field use. This contract proposes the development of a board capable of both indoor and outdoor use by improving such characteristics as water resistance, scuff resistance, bonding, mildew resistance, tensile strength, and durability without major detriment to the protective characteristics such as diffusion, aerosol penetration, and gas protection.

PROPOSAL AND AUTHORIZATION

The scope of the contract initially proposed by the U. S. Army Chemical Center Procurement Agency included three phases: the first to be a process study devoted to an investigation of the present diffusion board material and of methods for improving this formulation and process including objective evidence of the value of proposed changes; a second phase to consist of one or more limited production runs on reduced-scale equipment; and

a third phase to consist of an agreement to negotiate in good faith for future production runs on full-scale equipment.

In Proposal No. 379 to the U. S. Army Chemical Center Procurement Agency dated July 18, 1960, The Institute of Paper Chemistry proposed a program consisting of the process study (Phase I) only, because of the lack of suitable equipment for making pilot-scale or production runs, but including in this phase more consideration of processing variables than might have been intended in the original definition of Phase I and Phase II. Three avenues of approach were suggested, including addition of suitable additives homogeneously to the present board formulation, addition of suitable additives to the surfaces of the present board, and production of a three-ply board. The latter two approaches (if necessary) would emphasize retention of present protective characteristics in the interior of the board and development of improved physical characteristics in the surfaces.

In accordance with a specific request from the U. S. Army Chemical Center Procurement Agency, the Institute agreed to assume the responsibility of subcontracting with commercial organizations for two limited production runs of 1000 square feet each on reduced-scale equipment and two production runs of 15,000 square feet each on full-scale production equipment. Under date of September 13, 1960, Supplement A to the original proposal was submitted, indicating our willingness to assume this responsibility and including an estimate of the additional time and cost involved for these runs.

A contract, effective October 4, 1960, was received. Subsequently, we were notified of the delegation of the following personnel to administer the technical and administrative phases of this contract:

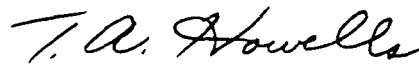
Contract Negotiator and Administrator	Mr. W. E. Yingling U. S. Army Chemical Center Procurement Agency Army Chemical Center, Maryland
Contract Project Officer	Mr. Grover C. Condon Protective Development Division U. S. Army Chemical Research and Development Laboratories Army Chemical Center, Maryland
Alternate Contract Project Officer	Mr. Frank G. Ort Protective Development Division U. S. Army Chemical Research and Development Laboratories Army Chemical Center, Maryland
Property Administrator	Mr. Michael Kienzynski U. S. Army Chemical Procurement District, Chicago 226 West Jackson Boulevard Chicago 6, Illinois

INITIATION OF PROGRAM

In accordance with information given in the contract, a request for the following material was submitted on October 14, 1960:

DOP Aerosol Test Apparatus
Pertinent technical reports
ASC charcoal

In accordance with a subsequent suggestion by the Contract Project Officer, arrangements were also made to visit the Army Chemical Center on November 1 for a thorough discussion of the background, previous experience, and specifications for the improved diffusion board material.



T. A. Howells, Chief
Special Processes Section