

# Chapter 1 – Introduction

Advanced Materials and Technology Manual



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## 1.0 INTRODUCTION

This Manual is prepared to familiarize Engineering Personnel, Contractors and Consultants with the fundamentals, principals and better practices for use of advanced materials and technologies during construction. This Manual specifies items addressed to both the Contractor and Engineer, however, the Engineer and Inspector should never adjust or otherwise operate the Contractor's equipment.

The Specifications and Plans will govern where the instructions in this manual differ from the Specifications and Plans for a project.

A list of topics that are within the scope of this manual is shown in Section 1.2 – Scope.

This manual will be maintained by the MnDOT Advanced Materials and Technology Unit (Office of Materials and Road Research) and will be available on the MnDOT Advanced Materials and Technology website at: <http://www.dot.state.mn.us/materials/amt/index.html>.

This manual will be updated with additional updates as required.

## 1.1 OVERVIEW OF THE ADVANCED MATERIALS AND TECHNOLOGY (AMT) UNIT

The mission of the Advanced Materials and Technology (AMT) Unit is to support the Office of Materials and Road Research, MnDOT Districts, Engineering Services Division, other state agencies and Contractors by providing advanced materials and technology expertise. The AMT unit provides support for the development and implementation of new methods to evaluate paving and grading and base material properties prior to and during construction. This work includes developing an understanding of basic technologies such as those using global navigation satellite systems, thermal imaging, laser-based scanning and automated equipment control. Such technologies will be refined to achieve construction efficiencies and quality control / quality assurance applications. These applications will result in hardware, software and testing specifications to be implemented on State and Local construction projects.

## 1.2 SCOPE

The scope of this manual includes the following subjects:

1. Definitions and acronyms of terms used in the manual and special provisions/specifications.
2. Typical processes, procedures, workflows, checklists, recommendations and best practices for the technologies.
3. Step-by-step procedures on the use of software programs that assist with deployment of the technologies and meeting associated specification / special provision requirements.