



1956

TECHNICAL REPORT (SUMMARY)

Orta Doğu Teknik Üniversitesi
Middle East Technical University
Mühendislik Fakültesi
Faculty of Engineering
Kimya Mühendisliği Bölümü
Dept. of Chemical Engineering
06531 Ankara, Türkiye
Phone: +90 (312) 2102601
Fax: +90 (312) 2102600
www.che.metu.edu.tr

REPORT NO. : 2008.03.04.0332/03
REPORT DATE : 12.06.2008
PREPARED BY : Instructor Dr. Cevdet ÖZTİN
METU, Chemical Engineering Department, 06531 Ankara
REQUESTED BY : SARAY Döküm ve Madeni Aksam Sanayi Anonim Şirketi
SUBJECT : Assessment of **Fire Behaviour Class** (DIN 4102)
and **Horizontal Burning Rate** (ASTM D635 and TS 5207)
SAMPLE STUDIED : ALUFACE SARAYBOND Brand Aluminum Composite Panels
RESULTS :

Fire Behaviour Class : B1
Horizontal Burning Rate (mm/min) : Non-measurable

SAMPLE DESCRIPTION AND TESTS CONDUCTED

The ALUFACE SARAYBOND Aluminum Composite Panel specimens successfully passed the B2 class (normal burning behaviour) experiments so that the B1 class (difficult burning behaviour) experiments were also conducted. The observations during and after these tests reveal that (a) the residual length unaffected on the exposed surface is at a level of 70%; (b) aluminum panels deforms to a level of 50% due to heat; (c) the average stack gas temperature reaches 194 °C, and (d) surface fire height remains at a level of about 80 cm, observations being within the failure limits. The core plastic material burnt partially at the edges and minimal amount of molten droplets that formed ceased to burn as they dropped on to bottom. Surface panels and the core material separated partially, but the core essentially maintained its integrity. Qualitative evaluation of smoke generation was within limits also. The samples were therefore accepted as conforming to **DIN 4102, B1 class (difficult burning behaviour)** requirements. Horizontal burning of specimens in accordance with **ASTM D635 (and TS 5207)** could not be initiated so as to make measurements, thus it is inappropriate to calculate a burning rate.

This report is valid for the specimens studied experimentally.

Regards,



ORTA DOĞU TEKNİK ÜNİVERSİTESİ
KİMYA MÜHENDİSLİĞİ


Dr. Cevdet ÖZTİN