



CARBIDE CONTENT, CHILL AND HARDENABLE CAST IRON MICROSTRUCTURES

WSD-M99A4-A

1. SCOPE

This document presents a series of photomicrographs of carbidic cast iron microstructures representing a range of carbide contents.

2. APPLICATION

This specification was released to assist in the rapid assessment of specific carbide contents required by individual Engineering Materials Specifications for chill or hardenable cast irons such as camshafts and tappets. More comprehensive volume contents may be determined by accepted image analysis techniques.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

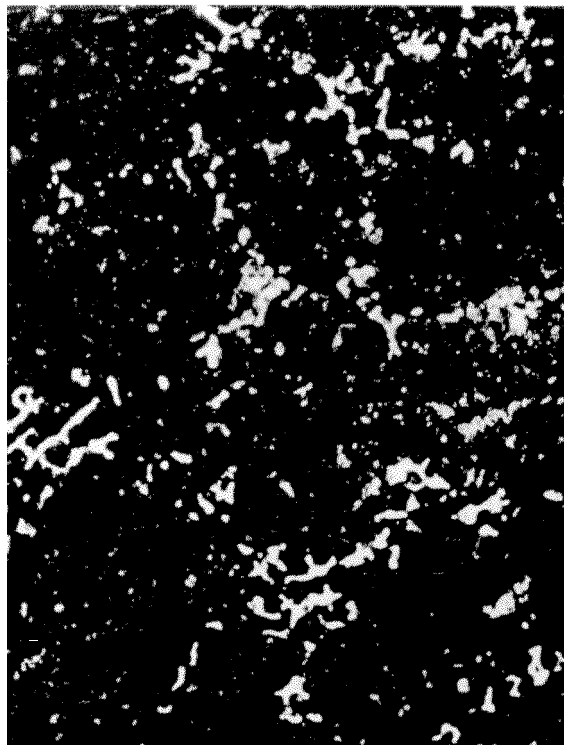
3.2 METALLOGRAPHIC PREPARATION (ASTM A 247)

Metallographic sections shall be taken from individual components representing the critical area as identified by the relevant materials specification and component drawings. Preparation of the section shall be in accordance with good metallographic practice for example ASTM A 247. Structures are to be etched in Nital to give similar contrast to attached photomicrographs.

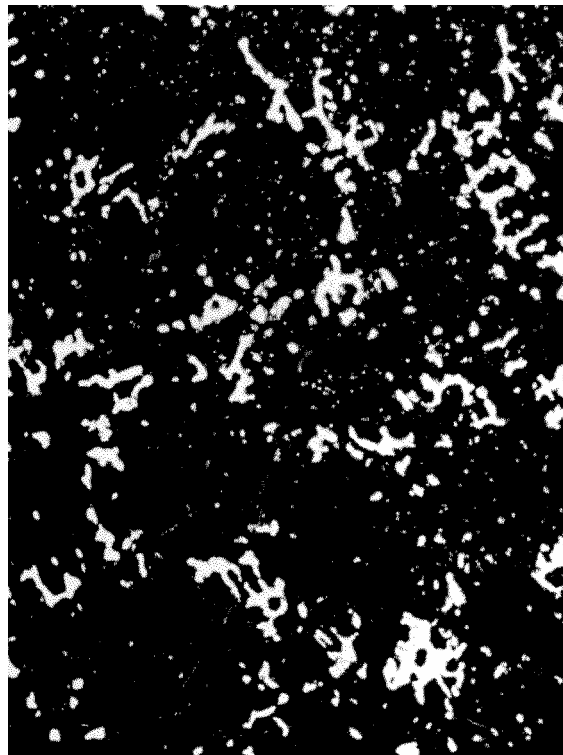
3.3 EXAMINATION PROCEDURE (ASTM E 2)

Comparison shall be made between the prepared section and the photomicrographs contained in this specification. Viewing shall be in accordance with ASTM E 2 at a magnification of 100 times or in the case of vastly different sized carbides, the dendrite size may be adjusted to similar proportions by changing the magnification between 50 and 500 times.

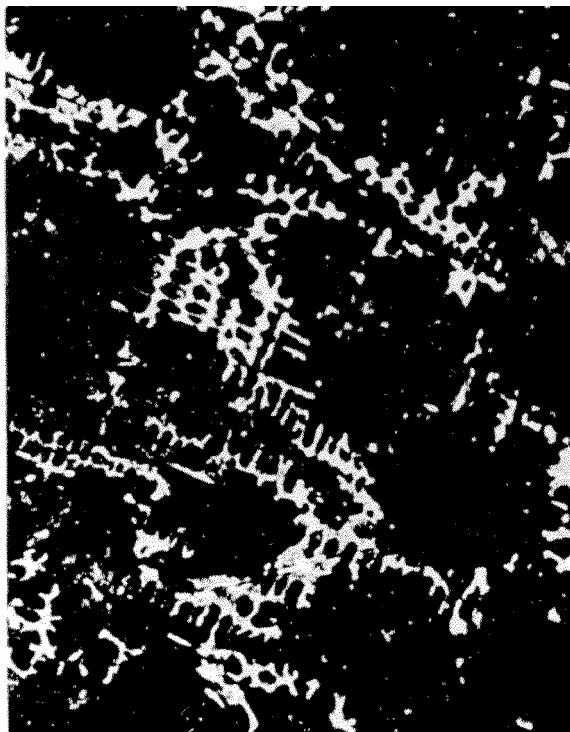
Date	Action	Revisions
2004 10 19	RE-ACTIVATED	Para 3.0 inserted; para 3.1 deleted R. Cooper
1996 10 03	INACTIVATED	K. Thurgood
1987 10 28	SM/ER1250TC	Released J. P. Riley, EAQ



5% Carbide



7% Carbide



10% Carbide



15% Carbide