Recommended Practices for Evaluation of Well Perforators

API RECOMMENDED PRACTICE 19B
SECOND EDITION, SEPTEMBER 2006

REAFFIRMED, APRIL 2011

ADDENDUM 1, APRIL 2014
ADDENDUM 2, DECEMBER 2014

AMERICAN PETROLEUM INSTITUTE

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Upstream Segment

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Recommended Practices for Evaluation of Well Perforators

0 Scope

0.1 GENERAL

This Recommended Practice describes standard procedures for evaluating the performance of perforating equipment so that representations of this performance may be made to the industry under a standard practice. This document supersedes all previously issued editions of API RP 43.

Sections 1 – 4 of this Recommended Practice provides means for evaluating perforating systems (multiple shot) in 4 ways:

1. Performance under ambient temperature and atmospheric pressure test conditions.
2. Performance in stressed Berea sandstone targets (simulated wellbore pressure test conditions).
3. How performance may be changed after exposure to elevated temperature conditions.
4. Flow performance of a perforation under specific stressed test conditions.

Section 5 of this Recommended Practice provides a procedure to quantify the amount of debris that comes out of a perforating gun during detonation. The purpose of this Recommended Practice is to specify the materials and methods used to evaluate objectively the performance of perforating systems or perforators.

0.2 IMPLEMENTATION

These procedures become effective as of the date of publication.

0.3 API REGISTERED PERFORATOR SYSTEMS

Information on API Registration of perforator systems can be found in Appendix A.

0.4 REPORTS AND ADVERTISEMENTS

Reports, articles, papers, periodicals, advertisements, or similar publications which refer to results from tests conducted according to API RP 19B must not be worded in a fashion to denote that the American Petroleum Institute either endorses the result cited or recommends or disapproves the use of the perforating system described.

Use of data obtained under API RP 19B tests in reports, articles, papers, periodicals, advertisements, or other published material shall include, as a minimum, all test configuration data not specified by API RP 19B or left to the verifying company's choosing by API RP 19B and the average measured results of the test.

1 Evaluation of Perforating Systems Under Surface Conditions, Concrete Targets

1.1 INTRODUCTION

The purpose of this section is to describe recommended practices for evaluating perforating systems using concrete targets under multiple shot, ambient temperature, and atmospheric pressure test conditions.

Penetration data recorded in API RP 19B Section 1 may not directly correlate to penetration downhole.

All Section 1 perforating system tests published shall be valid for a term of 5 years from the date of the test. After 5 years published system test can be recertified as described in 1.11 of this section.

1.2 TEST TARGET

The tests shall be conducted in a concrete target contained within a steel form as illustrated in Figure 1.