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Exam : **API-SIEE**

Title : Source Inspector Electrical Equipment

Version : DEMO

1.According to NFPA 70, an insulated conductor used within a switchboard or switchgear shall be rated not less than the voltage applied to it and:
A. water proof.
B. flame retardant.
C. totally enclosed.
D. grounded.
Answer: B
Explanation:
The correct answer is B because NFPA 70 requires conductors used inside switchboards and switchgear to be suitable not only for the circuit voltage, but also for safe operation within enclosed electrical assemblies where fault energy, heating, and fire propagation are important concerns. In this context, flame-retardant insulations required so that internal wiring does not readily support combustion or allow fire to spread inside the equipment lineup. This is especially important during abnormal conditions such as arcing, overheating, insulation failure, or short-circuit events.
Within the API Guide for Source Inspection and Quality Surveillance of Electrical Equipment, switchgear is one of the major covered equipment categories for source inspection and quality surveillance activities. The guide emphasizes that source inspectors must verify compliance with governing specifications, referenced codes, approved drawings, and applicable industry standards during manufacturing and inspection. It also states that the guide focuses on source inspection and quality surveillance activities rather than detailed design engineering alone. Therefore, when inspecting switchgear internal wiring, confirming that conductor insulation is properly voltage-rated and flame retardant is the correct code-based requirement.

2.Any reports, such as Material Test Reports, that have been modified or corrected should be:
A. accepted after clarification.
B. cause for immediate rejection.
C. rejected at the discretion of the source inspector.
D. accepted after signatures are verified.
Answer: A
Explanation:
The correct answer is A because, in source inspection practice, a corrected or revised report is not automatically invalid if the change is properly explained, traceable, and supported by the manufacturer’s quality system. The source inspector’s role is to review documentation for accuracy, traceability, consistency with specifications, and objective evidence of compliance. If a Material Test Report or similar record has been modified, the proper action is to obtain clarification, verify the reason for the correction, and confirm that the revised record remains authentic and controlled. Immediate rejection is too extreme unless there is evidence of falsification, loss of traceability, or unauthorized alteration.
This aligns with the API guide’s emphasis on source inspection and quality surveillance activities rather than arbitrary dispositioning, and on verifying compliance through documented evidence and surveillance of the manufacturer’s process. The guide is intended as a resource for the API Source Inspector Electrical Equipment body of knowledge, which includes document review, inspection planning, surveillance, and record verification as part of the overall source inspection process. Therefore, corrected reports should be accepted after clarification and verification, not rejected solely because they were revised.

3.According to NFPA 70, installed conductor insulation temperature rating shall be a required marking on what type of system?
A. Metallic busways
B. Nonmetallic auxiliary gutters
C. Sheet metallic auxiliary gutters
D. Non-metallic busways
Answer: B
Explanation:
The correct answer is B because nonmetallic auxiliary gutters require marking of the installed conductor insulation temperature rating. This requirement exists because nonmetallic systems are more directly affected by thermal limitations of the enclosure material than metallic systems. The marking helps ensure that the conductors installed in the gutter do not exceed the temperature capability of the nonmetallic enclosure, which is a key safety and compliance issue under NFPA 70. By contrast, sheet metallic auxiliary gutters do not rely on this same temperature-limitation marking in the same way, and busways are governed by different construction and marking requirements related more to voltage, current, short-circuit rating, and system characteristics than to installed conductor insulation temperature.
This aligns with the API Guide for Source Inspection and Quality Surveillance of Electrical Equipment, which places strong emphasis on verifying that equipment markings, nameplates, documentation, and construction details comply with the governing code, approved drawings, and purchase specifications during source inspection and surveillance. The guide also identifies electrical systems among its covered equipment areas and focuses on inspection and quality-surveillance activities rather than detailed design engineering alone.

4.According to API 541, exterior surfaces, with the exception of machined surfaces or corrosion resistant material, shall be coated with which of the following?
A. Heavy shipping grease
B. Oil soluble rust preservative
C. Vendor's standard paint
D. Inorganic zinc
Answer: C
Explanation:
The correct answer is C because API 541 requires the external non-machined surfaces of large electric motors to be protected by a paint coating system, typically the manufacturer’s or vendor’s standard paint unless the purchase specification calls for a special coating system. The wording in the question is important: it excludes machined surfaces and corrosion-resistant material. That exclusion points away from general preservation compounds and toward the normal protective finish applied to the motor exterior during manufacture. In source inspection practice, this is verified by checking the motor surface preparation, coating application, finish quality, and compliance with the purchaser’s specification.
The other options do not fit the normal API 541 requirement for general exterior finishing. Heavy shipping grease is used for temporary protection, not standard external finishing. Oil soluble rust preservative is more appropriate for machined or exposed metal surfaces requiring temporary corrosion protection during storage or shipment. Inorganic zinc may be used in special coating systems, but it is not the default API 541 requirement for all motor exterior surfaces. Therefore, the correct API 541 based answer

is vendor’s standard paint.

5.Which of the following tools is used for inspection of coating?
A. Dry film thickness DFT
B. Digital surface profile gauge
C. Surface profile replica tape
D. Ultrasonic thickness meter
Answer: A
Explanation:
The correct answer is A because the most common and direct inspection instrument used for a coating after application is the dry film thickness DFT gauge. In source inspection and quality surveillance, coating verification typically includes checking whether the applied paint or protective coating has achieved the specified thickness range. That is a fundamental acceptance point because coating that is too thin may fail prematurely, while coating that is too thick may crack, blister, or cure improperly. In practical inspection language, the option says “Dry film thickness DFT,” but it clearly refers to the DFT measuring gauge/tool used by inspectors.
The other options are related but not the best answer. A digital surface profile gauge and surface profile replica tape are mainly used to evaluate the surface profile of blasted steel before coating, not the final dry coating thickness itself. An ultrasonic thickness meter is generally used for base material wall thickness measurement, not routine paint-coating inspection. The API guide covers source inspection and surveillance of manufacturing activities and stresses verification against specifications, records, and inspection points for covered equipment.