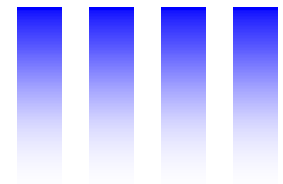




Re-Certification Exam

Version 1.1 - 2011





TECHNICIAN
SOLID SURFACE

Re-Certification Exam

This open book test consisting of forty questions is based on the articles in the re-certification workbook. Please read each article carefully and answer the questions for each section. Each correct answer is scored 2 points. As an open book test, a grade of 85% is required to pass the exam.

Step 1 – Review the re-certification workbook

Step 2 – Complete the re-certification application

Step 3 – Complete the test sections and place **all** answers on the *Answer sheet*

Step 4 – Send **ONLY** the completed *Application sheet, answer sheet* and renew fee

to ACMA (Please note: Your credentials cannot be processed without the renewal fee)

Step 5 – Upon successful completion of the test (scoring an 85% or higher) your credentials will be revalidated.

If the exam score does not qualify for revalidation, the exam workbook will be returned to the applicant for remedial review. The applicant can then correct and resubmit the test. If an applicant fails the re-certification test on the second attempt, his/her CCT credentials will not be revalidated. The candidate will be required to requalify by taking the original CCT exam.

Return Completed Exam and Re-Certification Fee to:

American Composites Manufacturers Association
CCT Re-Certification Program
1010 North Glebe Road
Suite 450
Arlington, Va. 22201

CCT-Solid Surface Re-Certification Application
(Print Clearly)

Applicant Information

First Name: _____ MI: _____ Last Name: _____

Primary e mail: _____

Home Address: _____

City: _____ State: _____ ZIP: _____

Home Phone: _____

Company Information

Company: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: _____ Fax: _____

Payment Information

Renewal Fees: \$50 members, \$100 nonmembers

Check: _____ Visa: _____ MasterCard: _____ Amex: _____

Amount: \$ _____

Please fill out the Full Credit Card Information on the following page to pay with your credit card.

VISA MASTERCARD AMEX

Full Credit Card Account Number:	
Expiration Date	
Security Code 3 Digit Code (Visa, MC) 4 Digit Code (AMEX)	
Billing Address	
Date	
Phone Number	

Federal Tax ID (52-1144059) ACMA Fax: 703-525-0743

I hereby authorize ACMA to charge my credit card for the payment of items below. I agree to pay for all requested registrations, enrollments and other items/services from ACMA, and agree that ACMA can charge my card for an amount different than what is below if the amount below is not correct.

Card Holder Name: _____

Signature: _____

Last Four Numbers of Authorized Card: _____

Amount to be charged: \$ _____

Description of Charge/ Names of CCT Candidates Paid For: _____

Name of Company Payment should be applied: _____

Internal Use Only:

Date Processed: _____ Initials: _____

Notes: _____

CCT-Solid Surface

For office use only
SCORE

Answer Sheet

2.5 points each
Certification Date _____
Expiration Date _____

Instructions: Place correct answer(s) next to the corresponding number.

Mailing Information: Your test results will be sent to the address you provide below.

Today's Date: ___/___/___

First Name: _____ MI: _____ Last Name: _____

Company/Institution: _____

Mailing Address (cannot be a PO Box) _____

City: _____ State: _____ ZIP: _____ Country: _____

- | | | |
|-----------|-----------|-----------|
| 1. _____ | 16. _____ | 31. _____ |
| 2. _____ | 17. _____ | 32. _____ |
| 3. _____ | 18. _____ | 33. _____ |
| 4. _____ | 19. _____ | 34. _____ |
| 5. _____ | 20. _____ | 35. _____ |
| 6. _____ | 21. _____ | 36. _____ |
| 7. _____ | 22. _____ | 37. _____ |
| 8. _____ | 23. _____ | 38. _____ |
| 9. _____ | 24. _____ | 39. _____ |
| 10. _____ | 25. _____ | 40. _____ |
| 11. _____ | 26. _____ | |
| 12. _____ | 27. _____ | |
| 13. _____ | 28. _____ | |
| 14. _____ | 29. _____ | |
| 15. _____ | 30. _____ | |

CCT-Solid Surface Re-Certification Exam

1. Composites typically use thermoset resins. The process of converting the resin from a liquid to a solid is called:
 - A. Drying
 - B. Crosslinking
 - C. Hardening

2. Common Plastics such as polyethylene, nylon and acrylic are:
 - A. Thermoplastics polymers
 - B. Crystalline polymers
 - C. Thermoset polymers

3. Which statement is true?
 - A. Metals have different strengths in different directions
 - B. Fibers may be oriented in specific directions to produce an anisotropic material
 - C. Composites are less complicated to engineer than metals

4. The precise definition of composites is:
 - A. A reinforcement fiber in a thermoset polymer resin matrix
 - B. A combination of a reinforcement fiber in a polymer resin matrix
 - C. Two or more photographs joined to form a single image

5. The function of reinforcement in a composite is:
 - A. To transfer loads between fibers
 - B. To increase the viscosity of the matrix
 - C. To increase the material's flexibility

6. The cross-linking reaction is at maximum activity:
 - A. when the initiator is added to the matrix
 - B. at the time of gelation
 - C. from the time the initiator is introduced to the resin to the time of peak exotherm

7. Poor initial cross-linking is always caused by low initiator levels.
 - A. True
 - B. False

8. The suggested initiator levels needed to insure optimum performance is between 1% and 2%.
 - A. True
 - B. False

9. In warm weather, it is acceptable to drop initiator levels below the specified percentage to control resin gel time.
 - A. True
 - B. False

10. The following are considered hard tooling used to produce solid surface products: (Indicate all that apply)
- A. RTV silicone
 - B. FRP composite polyester
 - C. Electroformed nickel shell
 - D. Glass
11. Engineered stone is different from typical solid surface materials because:
- A. more resin is used
 - B. large sized particles are used
 - C. several different fillers are used.
12. To enhance the physical properties of solid surface materials
- A. the matrix is mixed for 60 minutes before casting
 - B. the castings are cured at elevated temperature
 - C. the castings are subjected to vibration
13. Which of the following resin systems are not used in Solid Surface manufacturing?
- A. Dicyclopentadine-based resins (DCPA)
 - B. Polypropylene-epoxy based resins
 - C. Vinyl ester resins
14. The polymer backbone refers to:
- A. the basic building block of the resin system
 - B. the cross-linking mechanism of the resin system
 - C. the cast polymer matrix
15. To better insure that Solid surface products are made void-free use:
- A. Post cure the parts for 2 hours at 200°F
 - B. Vacuum-mixing techniques
 - C. Gel-coat the parts prior to casting
16. It is safe to mix organic peroxide initiators with fillers
- A. True
 - B. False
17. ATH is used to manufacture cultured onyx because:
- A. It's cheaper than calcium carbonate
 - B. It uses less resin
 - C. It provides the semi-translucent effect
18. Which of the following are true about calcium carbonate?
- A. it is a mined mineral, and is never chemically pure from batch to batch
 - B. it is manufactured filler that is consistent, batch to batch
 - C. it is considered combustible filler

19. What is dolomite?
- A. a filler used in cultured marble that has a specific gravity of 2.65
 - B. a mixture of calcium and magnesium carbonate
 - C. a brand name for solid surface
20. When identifying the hazards of a particular chemical or material, the first place to look for information is:
- A. The plant production office
 - B. The container labels
 - C. The local library
21. The higher the surface area, the more resin it will take to coat the surface of the filler particles. This means that particles with high surface area will:
- A. Increase the viscosity of a resin mix
 - B. Decrease the viscosity of a resin mix
 - C. Have no effect on the viscosity of a resin mix
22. The most common filler used in solid surface manufacturing is:
- A. ATH
 - B. Dolomite
 - C. Calcium Carbonate
23. The disadvantage of a high gloss is that any scratches will be more noticeable requiring excessive maintenance compared to having a mat finish.
- A. True
 - B. False
24. What is particle packing?
- A. Cross-linking
 - B. Resin shrinking
 - C. How individual particles fit together
25. In the event of a fire in the plant, employees should:
- A. Assess their immediate personal risk
 - B. Determine the quickest, safest way out of the building
 - C. Quickly exit the building and meet in a designated area
 - D. Yell fire
 - E. All of the above
26. What is an inherent problem with fillers used in solid surface?
- A. they are expensive
 - B. they absorb moisture
 - C. they are hard to handle

27. Which statement is true concerning the chemicals handled in the composites industry?
- A. Most of the chemicals are inherently safe
 - B. Most of the chemicals have the potential for creating hazards if handled incorrectly
 - C. There is little chance for mishandling these chemicals
28. Organic peroxide initiators, such as MEKP, should never be allowed to come into direct contact with dry fillers.
- A. True
 - B. False
29. The impact of temperature upon resin gel time is significant. A general rule of thumb from a temperature of 77° F
- A. the gel time will double for every 11° F increase in temperature
 - B. the gel time will double for every 11° F decrease in temperature
 - C. the gel time halves for every 11° F increase in temperature
30. Mixing for a consistent time period will:
- A. add cost to the process
 - B. ensure consistent results
 - C. not have any appreciable effect on the castings
31. Methylene Chloride is a solvent but presents a high level of potential hazards compared to other solvents. What are the potential hazards?
- A. Skin contact should be avoided therefore gloves are required
 - B. When TWA exceeds 12.5 ppm respirators are required
 - C. The solvent is very flammable
 - D. All of the Above
32. MACT stands for:
- A. Manufacturing Air Control Technology
 - B. Maximum Air Control Technology
 - C. Maximum Achievable Control Technology
33. Solid surface manufacturers are exempt from MACT requirements?
- A. False
 - B. True
34. A major source is defined as:
- A. a facility that emits HAPs
 - B. a facility that emits 10 tons per year of a single HAP
 - C. a facility that emits 25 tons per year of a single HAP
35. A HAP is defined as hazardous air pollutant?
- A. False
 - B. True

36. Cook tops must be seamless because seams cannot withstand the high temperatures that stoves generate.
- A. True
 - B. False
37. Cutouts in a solid surface countertop can be made using either a Router or a Saber Saw with a 45-degree undercut.
- A. True
 - B. False
38. When cutting solid surface materials always: (select all that apply)
- A. Provide proper ventilation
 - B. Use the appropriate PPE (Personal Protective Equipment)
 - C. Use an air hose to keep the surface clean
 - D. Use an approved vacuum dust collection system
39. The ideal gap range for seaming solid surface materials is:
- A. .010 - .040 inches
 - B. .030 - .050 inches
 - C. .050 - .070 inches
40. The best way to remove deep scratches is to:
- A. use fine steel wool
 - B. use 600 grit sand paper
 - C. use a multi step grinding process