



**APPLICATION
FOR
REGISTERED WATERPROOFING CONSULTANT (RWC®)**

Dear RWC Applicant:

All those who desire to become Registered Waterproofing Consultants (RWC) must substantiate to RCI that certain requirements have been met. These requirements include verifiable levels of work experience and education, high ethical standards, and a satisfactory score on a written examination.

Applications must be received, along with the appropriate fee, at RCI Headquarters ninety days prior to an exam. **The application fee is \$225 for RCI members and \$300 for non-members.** Applications received between sixty and eighty-nine days prior to an exam will be accepted with a late fee of \$50 for members and \$75 for non-members. Applications will not be accepted after sixty days prior to an exam.

After this completed application has been returned to RCI and approved, a registration form must be submitted for a specific location to take the exam (this form will be provided with the approval notification letter). Registration for a specific exam site should be received at RCI no later than three weeks prior to that exam. **The cost of the exam is \$175 for RCI members and \$225 for non-members** and should be submitted with the registration form. An authorization letter and exam site regulations will then be sent shortly before the exam. The applicant is responsible for arranging to take this exam. One must have an approved application on file at RCI to be eligible to sit for any exam.

Approved applications are valid for **two** years and reapplication is required if the applicant does not earn the RWC title within that time period.

To maintain registration, a renewal fee will be charged and evidence of continuing education must be provided. Registration must be renewed every year by December 31.

As an organization focused on advancing the roofing, waterproofing and exterior walls professions, we look forward to receiving your application and encourage your active involvement in RCI.

Sincerely,

Micki Kamszik
Associate Director

RCI, Inc.
1500 Sunday Drive, Ste 204 Raleigh, NC 27607
(T) 919-859-0742 (F) 919-859-1328
www.rci-online.org

Waterproofing

As defined by RCI, Inc.

Within the context of the Registered Waterproofing Consultant (RWC) designation, RCI, Inc. defines waterproofing as the treatment of a surface or structure to prevent the passage of water under hydrostatic pressure. This scope includes treatment of surfaces for the prevention of water entry where access is difficult or where special waterproofing materials are used such as:

1. Plaza deck
2. Exposed decks requiring waterproofing
3. Garden roof systems
4. Parking & traffic bearing structures
5. Terraces
6. Promenades
7. Below grade structures:
 - a. Walls
 - b. Tunnels
 - c. Slabs
8. Horizontal above grade waterproofing

The following would be excluded:

- Vertical walls above grade
- Conventional roofing

APPLICATION FOR REGISTERED WATERPROOFING CONSULTANT

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INSTRUCTIONS

REGISTERED WATERPROOFING CONSULTANT APPLICATION

DEFINITION

The candidate for the Registered Waterproofing Consultant (RWC) exam has at least 4 years experience in evaluation and design of waterproofing systems, specifically deck, plaza, and below grade waterproofing. The candidate should be qualified to render services regarding waterproofing including a general knowledge of sealants and coatings, and awareness of the interface of the waterproofing system with other building components.

GENERAL REQUIREMENTS

- A. The successful RWC candidate must:
1. Establish that he/she has met certain minimum requirements regarding education, personal work experience, character and ethics.
 2. Take and pass a two-part written examination. The examination will be offered each year at our annual national convention and at other times throughout the year as defined by RCI.
 3. Have a minimum of 4 years of experience directly related to the field of waterproofing or roof consulting.
- B. The applicant shall satisfy RCI that he/she has attained and agrees to the following minimum requirements:
1. The applicant has attained a minimum of 100 points for education, professional registration and/or work experience.
 2. The applicant has secured a minimum of 70 hours of continuing education through attendance at a minimum of three seminars directly related to the waterproofing or roofing industry, e.g. RCI, SWRI, ACI, ICRI, AIA, CSI, or other approved training and educational programs awarding educational units.
 3. The applicant shall have a strong moral and ethical character demonstrated by his/her references, experience and professionalism. The "Code of Ethics" for RCI is included in this application. It outlines the obligations of the professional consultant to the public, the client or employer, the profession, and the building industry. The Registered Waterproofing Consultant will promote and conform to these "Standards."
 4. The applicant shall always be totally objective, unbiased and impartial in his/her actions relating to waterproofing consulting.
 5. The applicant shall never have a conflict of interest or permit him/her to be placed in a position that would allow for a potential conflict of interest. Conflict of interest shall be defined as any activity or employment in which the applicant has any significant financial or other interest, or acceptance of any contribution if it would reasonably appear that such activity, employment, interest, or contribution could compromise the Registered Waterproofing Consultant's professional judgment or prevent the Registered Waterproofing Consultant from serving in the best interest of the client or employer.
 6. The title Registered Waterproofing Consultant, once attained, must be renewed every year. Requirements include submitting evidence of continuing educational hours in accordance with the registration renewal procedures established by RCI.

Documentation is required regarding an applicant's experience, education, professional registration, training, etc. Verification of an applicant's education and/or work experience shall be on a point system. A minimum of 100 points is required and may be obtained in one of the following ways: experience only; experience and education; experience, education, and professional registration. **EXPERIENCE IS MANDATORY FOR REGISTRATION – EDUCATION ALONE WILL NOT SUFFICE.**

C. The following assignment of points shall be implemented:

Education – 5 points shall be awarded per year of successful completion of college. You must furnish a transcript or diploma for all educational points.

The following maximum number of points shall apply for education:

Four year degree	= 30 points (industry related*)	25 points (general)
Five year degree	= 40 points (industry related*)	30 points (general)
Masters degree	= 10 points (industry related*)	5 points (general)
Doctorate	= 10 points (industry related*)	5 points (general)
Years of College (no degree)	= 5 points/year (20 points max)	

*Architecture, engineering, construction, chemistry, waterproofing consulting, or material science

Professional Registration – 20 points shall be awarded for Registered Architects (RA) or 20 points for Registered Professional Engineers (PE). Persons with dual (RA and PE) or multiple (2 RA's or 2 PE's) registrations shall receive a maximum of 20 points. (Include copy of license or registration)

RCI Registrations - 10 points shall be awarded for Registered Roof Consultants (RRC) or 5 points for Registered Roof Observers (RRO). Persons with dual RRC and RRO registrations shall receive a maximum of 10 points.

NOTE: The maximum number of points for Education and Professional Registrations is 50 points.

Personal Work Experience – 1 point shall be awarded per project or task in the following categories of experience related to waterproofing as defined in deck, plaza, below grade waterproofing, sealants, and coatings:

Category Service Rendered or Task Performed Maximum No. of Points**

1	Condition Surveys, Audits, or Investigations	20
2	Preparation or Design Review of Contract Documents	20
3	Construction Observations/Quality Assurance Observations	20
4	Forensic Investigations, Deposition, Expert Testimony	20
5	Moisture Surveys or Water Testing	5
6	Laboratory Testing: Physical/Quantitative Analysis	20
7	Research Directly Related to Waterproofing	20
8	Publications Related to Waterproofing (Articles, Books, Theses)	20
9	Lectures Presented Related to Waterproofing (Emphasizing Education)	20
10	Waterproofing Contracting Projects	20
11	Professional Association 2-year Active Participation (RCI, AIA, SWRI, ICRI, CSI, ASTM, etc.)	5

** The above items refer to services rendered or tasks performed by YOU, not by someone under your direction. Your experience as a waterproofing consultant is being evaluated, not your management ability or the experience of your company or subordinates. See Supplement Sheet A for additional information regarding these items.

Waterproofing consultants shall have a relatively broad base of experience. Applicant must secure points from experience in a minimum of three categories. You will note that each category has a maximum number of points permitted. This is to prevent an applicant from being certified with experience in only a limited area of expertise. You may earn points from more than one category for a single project. For example, on a building on which: you performed a waterproofing condition survey, a moisture survey supplemented with testing, gave deposition for litigation, and wrote an article which was published in a magazine – you could earn four points: one for categories 1, 4, 5, and 8.

Projects with multiple buildings or locations with identical construction and service rendered shall receive a maximum of five points per category, regardless of the number of buildings involved. If separate reports, specifications, etc. are provided for each building on a “stand-alone” project basis, each building then qualifies for points.

Examples of Computation of Points

- Example 1: A person with 1 year of college (5 points, industry related) would require 95 points through experience.
- Example 2: A registered engineer (20 points) with a four-year degree (30 points, industry related) would require 50 points through experience.
- Example 3: A person with a four-year degree (30 points, industry related) and a master’s degree (10 points, industry related) would require 60 points through experience.
- Example 4: A person with a high school diploma (0 points) and projects as a waterproofing contractor (20 points earned) would require 80 points from the categories of experience.

The “PROJECT REGISTER” forms are to be completed for each category an applicant claims for experience points. Two blank sheets are provided. The applicant may attach additional copies as needed. Check multiple categories if applicable.

This is an application that is intended for completion by honorable professionals. Each application will be reviewed and evaluated. References will be checked as well. False or misleading information will result in severe penalties, including revocation of registration.

For your own protection, make a copy of your completed application before sending it to RCI.

* * * *

APPLICANT PLEASE NOTE: The Engineer’s and Architect’s Professional Registration Boards of some states include the waterproofing consulting profession under the jurisdiction of the Professional Registration statutes. You are responsible to meet those requirements. RCI currently has no state jurisdiction or governmental registration sanction.



APPLICATION FOR REGISTERED WATERPROOFING CONSULTANT

RCI, Inc.
1500 Sunday Dr Ste 204
Raleigh, NC 27607
(800) 828-1902 or (919) 859-0742
Fax (919) 859-1328

Date _____

Type or Print Legibly Using Black Ink Pen

SECTION 1: PROFILE INFORMATION					
Full Name	Last	First	Middle		
Home Address	Street and Number	Apt.	Box	Road/Rural Route	
	City	Country	State	Zip	E-mail
Birth	Date	City	State	Citizenship	
Have you ever applied for RCI Registered Waterproofing Consultant classification before? () Yes () No If yes, please give date of application:					
Are you a Registered Architect? () Yes () No Date of first registration: State: #: Other States:					
Are you a Registered Engineer? () Yes () No Date of first registration: State: #: Other States:					
Are you a Registered Roof Consultant? () Yes () No Date of registration: #:					
Are you a Registered Roof Observer? () Yes () No Date of registration: #:					
Are you a Contractor or employed by one? () Yes () No Type: () General () Waterproofing () Roofing State and license number for each:					
Are you employed by or own a company that manufactures, distributes, or sells waterproofing/roofing products or materials? () Yes () No Identify:					
What percent of your principal income do you derive as a waterproofing consultant: % As a roof consultant %					
Do you have any conflict of interest (see page I, paragraph B-5 for definition), or do you work for, own, or have interest in any company having such conflicts? () Yes () No					
SECTION 2: BUSINESS INFORMATION					
Firm employed by: () Consulting () Architectural () Engineering () Contractor () Manufacturer () Distributor					
Name of business:					
Business Street Address:		City:	State:	Zip:	Telephone:
Organization: () Individual () Individual Proprietorship () Partnership () Corporation () Other (please specify):					

Name _____

Date _____

SECTION 3: EDUCATION

State in chronological order the name and location of each high or preparatory school, college, university or technical school attended (a high school diploma not required with 10 or more college coursework units). Also list graduate work, evening school, correspondence school, research work, apprenticeship program, etc. For college or university attendance, ask the institution to forward a CERTIFIED COPY OF YOUR TRANSCRIPT(S) to RCI. For incomplete college or university work, indicate the number of semesters completed. Attach additional sheets as required; place name in upper right margin.

CIRCLE LAST YEAR COMPLETED: Grade School: 1 2 3 4 5 6 7 8 High School: 9 10 11 12 College: 1 2 3 4 5 6 7 8

School	Name and Address of Institution	Dates Attended Mo/Yr to Mo/Yr	Did you Graduate?	Semesters Completed	Major/Technical Course	Degree
High School						
Junior College						
College						
Other						
Other						

SECTION 4: PROFESSIONAL HISTORY AND EMPLOYMENT

On Attachment Sheet 1, provide information regarding your personal work history, background, and experience directly related to waterproofing. Do not include employment in non-related fields or employment.

SECTION 5: PERSONAL WORK EXPERIENCE

On Attachment Sheet 2 (Project Register), list projects for which you claim personal work experience. A minimum of ten projects from three separate service categories must include a project contact and telephone number. You may be asked to provide additional project contact information during the application approval process. You may attach additional copies as necessary. The items below refer to services rendered or tasks performed by you, not by someone under your direction. Your experience as a waterproofing consultant is being evaluated, not your management ability or the experience of your company or of your subordinates. See Supplemental Sheet A for additional information regarding the categories listed below.

One point shall be awarded per project or task in the following categories of experience related to waterproofing. You must earn points in a minimum of three categories.

Category	Service Rendered or Task Performed	Maximum Number of Points
1.....	Condition Surveys, Audits or Investigations	20
2.....	Preparations or Design Review of Contract Documents	20
3.....	Construction Observation/Quality Assurance Observations.....	20
4.....	Forensic Investigations, Deposition, Expert Testimony.....	20
5.....	Moisture Surveys or Water Testing	5
6.....	Laboratory Testing: Physical/Quantitative Analysis.....	20
7.....	Research Directly Related to Waterproofing	20
8.....	Publications Related to Waterproofing (Articles, Books, Thesis)	20
9.....	Lectures Presented Related to Waterproofing	20
10.....	Waterproofing Contracting Projects.....	20
11.....	Professional Association 2-year Active Participation (RCI, AIA, SWRI, ICRI, CSI, ASTM, etc.).....	5

On Attachment Sheet 3 you are to summarize your personal work experience, education and professional registration. A minimum of 100 points is required for registration.

SECTION 6: CONTINUING EDUCATIONAL HOURS EARNED

On Attachment Sheet 4, provide information regarding your receipt of continuing educational hours through your attendance at seminars, training courses, etc. directly related to roofing or waterproofing. You are required to have attended a minimum of three seminars (i.e. - RCI, AIA, SCWI, ICRI, CSI, ASTM or other approved training and educational programs) dealing with waterproofing or roofing technology and shall have documentation of such attendance. Documentation should be in the form of a certificate or letter from the sponsoring organization stating the name of the course, date course was held, and number of technical hours awarded. Minimum of 70 credit hours required.

SECTION 7: REFERENCES

On attachment Sheet 5, give names and addresses of five references. **Three** must know you professionally and be a Registered Architect, Registered Engineer, Registered Roofing Consultant, or Registered Waterproofing Consultant. References may **not** be a relative of yours. In addition, only one reference may be from a current employer or fellow employee. Each reference listed must have direct personal knowledge of your character, ethics and professional competence. Return this summary sheet to RCI. **Make five copies** of Attachment Sheet 6 and complete the top portion of the REFERENCE FORM for each reference listed. Please mail these forms directly to the individuals you have selected.

SECTION 8: CODE OF ETHICS

The "[Code of Ethics](#)" for RCI, Inc. (Attachment Sheet 7) outlines the obligations of the consultant to the public, the client, the employer, the profession, and the building industry. The Registered Waterproofing Consultant must promote and conform to these Standards.

SECTION 9: AFFIDAVIT CERTIFICATION, AUTORIZATION AND RELEASE

Please complete Attachment Sheet 8 in the presence of a notary and submit to RCI with your application.

SECTION 4: PROFESSIONAL HISTORY & EMPLOYMENT

Name _____

Date _____

() New

() Update

() Continuation Sheet

List in order, beginning with the first employer, your work history directly related to waterproofing and/or roof consulting. Do not include employment in non-related fields or employment. Add additional sheets as necessary.

DATE From To*	(1) Company Name (2) Address (3) City, State, Zip (4) Title/Position	Description of Experience (Briefly in space provided)
	(1) (2) (3) (4)	
	(1) (2) (3) (4)	
	(1) (2) (3) (4)	
	(1) (2) (3) (4)	

- Type "Present" in this column to indicate your current employer.

SECTION 5: PERSONAL WORK EXPERIENCE

Description of Service Categories

1. Condition Surveys, Audits or Investigations

This applies to the scope of work in which a consultant assesses the condition of a waterproofing installation. This would be performed in general accordance with the recommended procedures of RCI, AIA, SWRI, ICRI, CSI, ASTM and/or other organizations in which the condition of waterproofing is observed, identified and documented. Reporting could be through a standard checklist format or through a narrative type report. The report may include, but is not required to include, photographs and/or video documentation.

2. Preparation or Design Review of Contract Documents

This may be a complete set of documents including the bidding documents, general conditions, technical specifications, plans, sections and details, as they relate specifically to waterproofing. On some projects, however, only the technical specification must be prepared by the consultant for implementation within another design professional's contract documents. The contract documents, in any event, would be complete. Design review of construction documents, specifically waterproofing systems, is acceptable.

3. Construction Observations/Quality Assurance Observations

The scope of work under this task would be your personal observations during the construction for the assurance of quality of another's work. In most cases, the person who performs these services would be under the direction or control of a superior, preferably an experienced waterproofing consultant. In some cases, the waterproofing consultant may provide these services directly. Written documentation is required for this scope of work in the form of narrative reports or checklist reports. The applicant should be aware that points can't be gained by a consultant for a technician under his control who performs these services. Points gained in this item must be the direct on-site experience of the applicant.

4. Forensic Investigations, Deposition, and Expert Testimony

The forensic investigation may include site observations, field tests, laboratory tests and analysis, video and photographic documentation, and other procedures implemented in a standard investigation of a waterproofing project that may go to litigation. The project may or may not include depositions, and may or may not include expert testimony. You may only receive one point for each legal case; multiple points are not allowed where both deposition and court testimony are provided. Experience gained through the legal arena is applicable even if the case does not go to trial.

5. Moisture Surveys or Water Testing

One point shall be awarded for each project in which the applicant performs water testing or non-destructive moisture surveys. Multiple points are not awarded for each individual project even if moisture scan techniques are utilized, unless each technique is reported completely independent of other techniques, e.g. separate surveys are issued. One point is awarded for each project on which a moisture survey or water test is performed.

Moisture surveys or water testing may be presented in a written report including information regarding the procedures utilized, the findings, and conclusions from the observations. Recommendations may be presented but are not mandatory. A drawing generally accompanies the report. Photographic and video documentation may or may not be presented, depending upon the project. One point shall be awarded for each project. For example, on a building with seven additions involving seven different levels and seven different constructions, only one point shall be awarded if a single report is presented. If separate reports are presented for separate buildings or different services and these are stand-alone reports, then multiple points may be claimed.

SECTION 5: PERSONAL WORK EXPERIENCE

Description of Service Categories (Continued)

6. Laboratory Testing: Physical/Quantitative Analysis

This item refers to ASTM testing for physical and/or quantitative analysis of waterproofing materials. This could include test cut analysis, material testing, forensic testing, and other procedures utilizing scientific methods and procedures. Gravimetric testing of core samples is not considered laboratory testing, but a supplement required in waterproofing condition surveys and/or moisture condition surveys, etc.

7. Research Directly Related to Waterproofing

This would generally relate to research performed on waterproofing projects and materials in which technology is developed or utilized. Research, referred to herein, does not refer to procedures customarily implemented or used by consultants. This relates or refers to new innovative thinking. Written documentation must accompany this research to be valid and it must be substantiated by a second party.

8. Publications Related to Waterproofing (Articles, Books, and Theses)

These include articles, books, theses, etc. related to waterproofing that have been published-- not those in revision or in draft form. The publishing may not be in an in-house or interagency type publication. These publications also shall not be solely directed to marketing, or the promotion of one's experience or ability. The intention of the publications earning credit in this item must have a fundamental basis that is educational or newsworthy.

9. Lectures Presented Relating to Waterproofing (Emphasizing Education)

The primary purpose of the lectures must be educational. Lectures receiving points under this item shall not be solely of a marketing nature. Credit shall not be awarded to lectures in which the primary purpose of the presentation was to promote one's company or abilities. Lectures that earn points must emphasize the educational nature of the presentation. That is not to say that a marketing lecture cannot present educational information, but the primary purpose must not be to only promote one's company or self.

10. Waterproofing Contracting Projects

Points shall be awarded for projects in which the applicant was an employee of a contractor and was directly in a position of project management, supervision, or installation of a waterproofing project. Merely being on a project site does not constitute the kind of experience for which this item was intended. The same criteria regarding multiple building locations, etc., pertinent to other categories apply here as well.

11. Professional Association 2-year Active Participation (RCI, AIA, SWRI, ICRI, CSI, ASTM, etc.)

Credit shall be awarded for active 2-year participation in professional associations such as RCI, Inc., the Construction Specification Institute, ASTM International, the American Society of Civil Engineering, the American Institute of Architecture, etc. Active participation is mandatory; merely being a card –carrying member is not sufficient.

Name _____ Date _____

SECTION 5: PERSONAL WORK EXPERIENCE

CATEGORIES

(Check multiple categories per project, if applicable – see pages 5 and 6 for descriptions)

PROJECT REGISTER*		1	2	3	4	5	6	7	8	9	10	11
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											

A minimum of ten (10) projects from 3 separate service categories must include a project contact and telephone number. Additional contact information may be requested.

*Duplicate sheet as needed

Name _____ Date _____

SECTION 5: PERSONAL WORK EXPERIENCE

CATEGORIES

(Check multiple categories per project, if applicable – see pages 5 and 6 for descriptions)

PROJECT REGISTER*		1	2	3	4	5	6	7	8	9	10	11
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											
#	Project Name: _____ Project Location: _____ Project Contact: _____ Telephone: _____ Project Date _____											

A minimum of ten (10) projects from 3 separate service categories must include a project contact and telephone number. Additional contact information may be requested.

*Duplicate sheet as needed

Name _____

Date _____

SECTION 5: SUMMARY OF POINTS

PERSONAL WORK EXPERIENCE POINTS

Category	Services Rendered or Task Performed	Max. # of points	Points/Project	Number of Projects	Total Points
1.	Condition Surveys, Audits, or Investigations	20	1		
2.	Preparation or Peer Review of Contract Documents	20	1		
3.	Construction Observations/Quality Assurance Observations	20	1		
4.	Legal: Expert Testimony, Deposition, Forensic Investigations	20	1		
5.	Moisture Surveys or Water Testing	5	1		
6.	Laboratory Testing: Physical/Quantitative Analysis	20	1		
7.	Research Directly Related to Waterproofing	20	1		
8.	Publications Related to Waterproofing (Articles, Books, Theses)	20	1		
9.	Lectures Presented Related to Waterproofing (Emphasizing Education)	20	1		
10.	Waterproofing Contracting Projects	20	1		
11.	Professional Association 2-year Active Participation (RCI, AIA, SCWI, ICRI, CSI, ASTM, etc.)	5	1		
TOTAL Number of Points Claimed for Personal Work Experience (Max = 100)					

EDUCATIONAL POINTS

Four-year Degree (Industry /General))	30/25			
Five-year Degree (Industry/General)	40/30			
Years of College (no degree)	5/Yr.	20 max		
Masters Degree (Industry/General)	10/5			
Doctorate (Industry/General)	10/5			
TOTAL Number of Points Claimed for Education (Max. 40)				

PROFESSIONAL REGISTRATIONS/LICENSES POINTS

Registered Architect	20			
Licensed/Registered Engineer	20			
Registered Roof Consultant	10			
Registered Roof Observer	5			
TOTAL Number of Points Claimed for Professional Registrations (Max. 20)				
GRAND TOTAL NUMBER OF POINTS CLAIMED				

NOTES:

1. Applicant must have points in a minimum of three categories for work experience.
2. A project register must be completed for each project. Some may include more than one service category.
3. Refer to Page II in Instructions for point limitations placed on multiple building projects.
4. Maximum number of points for Education is 40 points.
5. Maximum number of points for Registration is 20 points.
6. Transcript or diploma must accompany application to substantiate all education points.
7. Copy of License or Registration Certification must accompany application.
8. A minimum of 10 projects from 3 separate service categories must include a contact & phone number.

SECTION 6: CONTINUING EDUCATIONAL HOURS EARNED

Name _____

Date _____

- () New
- () Update
- () Continuation

Course Name	Presented By	Dates	Hours
		Total #	

Please include documentation of attendance. Should be in the form of a certificate or letter from the sponsoring organization stating the name of the course, date course was held and number of hours/units awarded. **Minimum of 70 credit hours required.**

SECTION 7: REFERENCES

Name _____

Date _____

- () New
- () Update
- () Continuation

Name & Company	Address/City, State, Zip	Telephone and Position/Title

Note: Please complete the top portion of the reference form (Attachment Sheet 6) for each person listed above. Mail directly to each reference, whom will then mail the form directly back to RCI.

SECTION 7: REFERENCE FORM

Date _____

Dear _____:

An application for Registered Waterproofing Consultant has been filed with the RCI, Inc. by _____ of _____, _____ (applicant) (company) (city/state).

Will you kindly give the information requested below, if known, and make any comments that may be of value to RCI in evaluating the applicant's qualifications.

Information secured from references is for the confidential use of the organization and the source and character of the information will not be divulged, except in special cases when required by law.

Both the applicant and RCI, Inc. will appreciate your cooperation in promptly furnishing the information requested.

GENERAL INFORMATION

- 1. Applicant's present position _____
2. Number of years known _____
3. Applicant's moral character, professional ethics and personal reputation are _____
4. How long has the applicant been engaged in active waterproofing work? _____
5. In your opinion is the applicant competent as a waterproofing consultant? _____

Signed _____
Name (Print) _____
Title _____
Company _____
City/State _____
Date _____
Are you related to the applicant? _____
If yes, how related _____
Are you a Licensed/Registered Engineer? _____
Are you a Registered Architect? _____
Are you a Registered Roof Consultant? _____
Are you a Registered Waterproofing Consultant? _____

Remarks:

If, for some reason, you do not desire to serve as a reference for the applicant, please return this form to us with a comment to that effect.

REFERENCE: Please return form to:

RCI, Inc.
1500 Sunday Drive Ste 204
Raleigh, NC 27606
800/828-1902 or 919/859-0742 FAX 919/859-1328

SECTION 8: CODE OF ETHICS RCI, Incorporated

Adopted July 17, 2001
Revised March 28, 2006

Introduction: The standards contained in this Code of Ethics are statements of ethical principles having broad applicability to members and registrants of RCI, Incorporated (RCI). However, the enumeration of particular duties and the proscription of certain conduct do not negate the existence of other obligations logically flowing from such principles. Conduct deemed unethical may be construed to include lesser offenses, such as aiding and abetting.

Members and registrants of RCI should also recognize that their profession and their practice may be governed by various laws and regulations regarding professional registration and the conduct of trade. It is their responsibility, therefore, to be familiar with those laws and regulations and to conduct themselves accordingly.

General Obligations: Members and registrants shall maintain and further their knowledge of the science and profession of roofing, waterproofing, and the building envelope, and shall maintain the highest possible standard of professional judgment and conduct.

Obligation to the Public: Members and registrants should uphold the letter and spirit of the ethical standards governing their professional affairs and should consider the full impact of their actions on the community at large.

Thus, a member or registrant shall:

- I. Engage only in accurate, appropriate and truthful promotion of his/her practice;
- II. Be respectful of the rights of others in obtaining professional work or employment; and
- III. Make only accurate, truthful and appropriate statements or claims about his/her professional qualifications, experiences or performance.

Obligations to the Client: Members and registrants shall conduct themselves in a fashion, which brings credit to themselves, their employers and their profession. In addition to upholding the behavioral standards described above, a member or registrant:

- I. Shall preserve the confidence of his/her client or employer and serve each in a professional and competent manner.
- II. Shall exercise unprejudiced and unbiased judgment and conduct when performing all professional services;
- III. Shall practice only in his/her area of competence;
- IV. Shall decline any activity or employment, avoid any significant financial or other interest, and decline any contribution if it would reasonably appear that such activity, employment, interest, or contribution could compromise his or her professional judgment or conduct, or prevent him/her from serving the best interest of his/her client or employer, without making full disclosure to the client and obtaining the client's consent thereto;
- V. Shall neither offer nor make any payment or gift to any public official, private client or industry representative with the intent of influencing that person's judgment or decision in connection with an existing or prospective project in which the member/registrant is interested; and
- VI. May contribute his services or anything of value to those endeavors which the member deems worthy. Further, a member or registrant has the right to participate in the political process and to contribute time and money to political campaigns.

Obligations to the Profession and Building Industry: Members and registrants shall:

- I. Recognize the value and contributions of others engaged in the design and construction process, and refrain from making false statements about the work of others, and shall not maliciously injure or attempt to injure the prospects, practice, or employment position of others; and
- II. Encourage professional education and research, as well as the development and dissemination of information relating to the design and construction of roofing, waterproofing, and building envelope systems.

Further, the following practices are not in themselves unethical, unprofessional, or contrary to any policy of RCI, and RCI members and registrants are free to decide for themselves whether to engage in any of these practices:

- I. Submitting competitive bids or price quotations, including in circumstances where price is the sole or principle consideration in the selection of a consultant;
- II. Providing discounts; or
- III. Providing free services.

SECTION 9:AFFIDAVIT CERTIFICATION, AUTHORIZATION AND RELEASE

State (Province) of _____

County of _____

_____, being first duly sworn, deposes and says:
(Applicant's Name)

I, the Applicant named above, have read the contents hereof, and to the best of my knowledge and belief the statements contained in this application are true in substance and effect and are made in good faith. I hereby subscribe to and agree to conform to the Code of Ethics for RCI, Inc. I shall endeavor never to place myself in a conflict of interest or permit myself to be placed in a position that would allow for a potential conflict of interest. Conflict of interest shall be defined as any activity or employment having any significant financial or other interest, or acceptance of any contribution if it would reasonably appear that such activity, employment, interest or contribution could compromise my professional and objective judgment as a Waterproofing Consultant or prevent me from serving the best interest of my client.

I also hereby authorize any individual, company or institution with whom I have been associated to furnish RCI, Inc. with any information concerning my qualifications for Registered Waterproofing Consultant which they have on record or otherwise, and do hereby release the individual, company or institution and all individuals connected therewith from all liability for any damage whatsoever incurred by me as a result of their furnishing such information.

Subscribed and sworn to before me this _____ day of _____, 20____

(Signature of Applicant)

(SEAL)
My Commission expires _____

(Signature of Notary Public)



Application for Registered Waterproofing Consultant Payment Form

Enclosed is a check in the amount of: \$225 member fee \$300 non-member fee

Please accept a late fee: \$50 member fee \$75 non-member

Charge my VISA MasterCard American Express for:

\$225 member fee \$300 non-member fee
 \$50 late member fee \$75 late non-member fee

Name _____ Telephone _____

Account Number _____ Expiration Date _____

3- or 4-Digit Verification Value Code _____

Signature _____ Date _____

Please return the completed application along with payment in US dollars to:

RCI, Inc.
1500 Sunday Drive Ste 204
Raleigh, NC 27607
(T) 919-859-0742 (F) 919-859-1328

CHECKLIST TO ACCOMPANY REGISTERED WATERPROOFING CONSULTANT APPLICATION

Applicant's Name _____

Date _____

A check or initial in the block at the right indicates that you have completed that requirement of the application.

1. Application fee enclosed (\$225 members/\$300 nonmembers).....
2. Completed Sections 1 and 2 of the application.....
3. Section 3 of the application:
 - a. High School Diploma enclosed (if b or c below is not provided)
 - b. College transcript(s) have been requested (if diploma not available)
 - c. College Diploma has been enclosed
4. Section 4 of application:
 - a. All dates are listed.....
 - b. All employers' names and addresses are listed.....
 - c. Brief description of experience under each employer is listed.....
5. Section 5 of application - Attachment Sheets 2:
 - a. Each project for which I claim experience is registered on Attachment Sheet 2A - 2K.....
 - b. All names, locations and dates of projects listed
 - c. All projects registered represent my experience (not someone under my direction)
 - d. At least 10 contact names and phone numbers are listed from 3 separate categories
 - e. All projects claimed truly reflect worthy experience under the appropriate heading
6. Section 5 of application - Attachment Sheet 3:
 - a. All points claimed are summarized by category.....
 - b. Educational points are substantiated by a transcript or copy of my diploma (enclosed)
 - c. I have attained points in a minimum of 3 categories.....
 - d. Points claimed for professional registration are substantiated by a copy of my Registration Certificate or License (enclosed)
7. Section 6 of application - Attachment Sheet 4:
 - a. All course names, sponsoring organization, dates and credit hours claimed listed
 - b. Attended minimum of 3 seminars (70 hours) dealing with waterproofing and roofing technology
8. Section 7 of application:
 - a. Listed on Attachment Sheet 5 are five references, three of whom are a Registered Architect, Professional Engineer, Registered Roof Consultant or Registered Waterproofing Consultant
 - b. None of the references are a relative.....
 - c. No more than one of these references is a present employer or fellow employee from current firm.....
 - d. Made copies of Attachment Sheet 6 for EACH reference. Completed top part only for each
 - e. Reference forms mailed directly to each reference
9. Section 8 of application: Attachment Sheet 7
I have read and agree to abide by the Standards of Ethical Practice for RCI, Inc.
(Attachment Sheet 7).....
10. Section 9 of application: Attachment Sheet 8
 - a. Affidavit has been executed and notarized

When complete and all spaces are checked, sign below, enclose this checklist, and mail the completed application form unfolded in a large envelope to RCI. Allow 90 days for processing. **MAKE A COPY OF YOUR COMPLETED APPLICATION BEFORE SENDING TO RCI** for your own protection.

This is to certify that I have completed the application as required by the association, have checked all details and entries, and herewith submit said application for registration. I understand that registration is contingent upon meeting the requirements of the RCI and successful completion of the required examinations.

Signature of Applicant: _____



STUDY GUIDE

REGISTERED WATERPROOFING CONSULTANT EXAM

Prepared By

RWC Examination Development Committee

RCI, Inc.
1500 Sunday Drive, Suite 204
Raleigh, NC 27607
800-828-1902 919-859-0742
FAX 919-859-1328

RWC STUDY GUIDE

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STUDY GUIDE RWC EXAMINATION RCI, Inc.

INTRODUCTION

One early goal of RCI, Inc. was to develop a nationally recognized registration program. The Registered Waterproofing Consultant Program was developed in 2004. RCI is working toward national recognition of its Registration Program and hopes to achieve this goal in the future. The primary beneficiaries of this Registration Program will be the public, the waterproofing industry, and those individuals who become registered.

Registration is a two-part program based on verifiable minimum levels of education, training, experience, and satisfactory performance on a comprehensive written examination.

The application for registration allows RCI to verify certain aspects of your education and waterproofing experience. The written examination confirms minimum levels of education, training, and experience by testing your knowledge of below grade, plaza deck and green roof waterproofing and your ability to use this knowledge in practical applications.

This Study Guide outlines subjects that are addressed in the written examination; however, the Study Guide is not intended to be an inclusive listing of every topic addressed on the examination. This document is strictly a guide. However, when making purchases, RCI recommends that all applicants purchase the most recent version of all reference books.

Please understand that the examination is not tailored to any one particular area of below grade waterproofing or to the design and construction practices unique to your geographic area. The examination deals with waterproofing consulting in general as indicated by the references listed on the next page. It may include all phases of waterproofing consulting such as: evaluation, design, testing, construction, and all waterproofing systems.

In order to receive a passing score on the examination you must be thoroughly familiar with a broad spectrum of principles related to below grade, plaza deck and green roof waterproofing system design, testing and construction. This spectrum of knowledge includes waterproofing design parameters, specification development, project management, project administration, life cycle costing, conflict resolution, contracts and contract documents, construction materials, testing, and report preparation. Education and training in these areas are extremely important. However, practical application under the guidance of a qualified mentor may be even more important because it reinforces the formal education and training and provides a sound foundation over a broad spectrum. It pulls everything together. The weakness most often identified with exam failure is a narrow focus in the industry.

The registration examination is offered several times each year. The dates and locations can be obtained from RCI Headquarters or from the RCI website (rci-online.org). The examination is eight hours in length and consists of two parts; one three hour segment and one five hour segment.

The examination has a closed book format. Any required formulas, charts, or tables will be provided with the examination.

Each part of the examination carries equal weight and a passing score must be attained for each part. A standard psychometric process was used to determine that 218 points (300 maximum) are required to pass Part 1 and 272 points (400 maximum) are required for Part 2. Passing one part of the exam and failing another part of the exam requires only that the applicant retake the part for which a passing score was not attained.

PART 1

Part 1 of the examination consists of approximately 300 multiple choice questions.

Questions for Part 1 have been prepared based on the following documents:

1. 2000 International Building Code 1802.2.3, publishes by the International Code Council, Inc.
2. ACI(American Concrete Institute)
ACI 318
3. AIA Handbook of Professional Practice, published by John Wiley & Sons Inc., Copyright 2001 by AIA, Editor, Joseph Demkin.
AIA A101, "Standard Form of Agreement Between Owner and Contractor" published by American Institute of Architects, 1997
AIA 201, "General Conditions of the Contract or Construction" published by American Institute of Architects, 1997
4. APA Technical Topics Form TT-002, published by The Engineered Wood Association, May 2002.
5. ASCE 7 (American Society of Civil Engineers) "Minimum Design Loads for Building & Other Structures", published July, 2002 by ASCE Press
6. ASHRAE 1984 Fundamentals Handbook
7. ASTM Standards

C 717	Standard Terminology of Building and Sealants
C 755	
C 794	Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
C 898	Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Separate Wearing Course
C 920	Standard Specification for Elastomeric Sealants
C 981	Standard Guide for Design of Built-Up Butuminous Membrane
C 1193	Standard Guide for the use of Joint Sealers
D 312	Standard Specification for Asphalt Used in Roofing
D 2829	Sampling and Analysis of Built-up Roofs
D 3617	Sampling and Analysis of New Built-up Roofs
D 5295	Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems
D 5385	Hydrostatic Pressure Resistance of Waterproofing Membranes
D 5843	Application of Fully Adhered Vulcanized Rubber Sheets Used in Waterproofing
D 5898	Standard Details for Adhered Sheet Waterproofing
D 5957	Flood Testing Horizontal Waterproofing Installations

D 6135	Application for Self-Adhered Modified Bituminous Waterproofing
D 6451	Application of Asphalt Based Protection Board
D 6506	Asphalt Based Protection Board for Below-Grade Waterproofing
D 6622	Application of Fully Adhered Hot-Applied Reinforced Waterproofing Systems
D 6769	Application of Fully Adhered, Cold-Applied, Prefabricated Reinforced Modified Bituminous Membrane Waterproofing Systems
E 84	Test Method for Surface Burning Characteristics of Building Materials
E 331	Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
E 917	Measuring Life-Cycle Costs of Buildings and Building Systems
E 1105	Field Determination of Water Penetration of Installed Exterior Windows, Curtain Walls, and Doors by Uniform or Cyclic Static Air Pressure Difference
F 1869	Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

8. American Architectural Manufacturers Association

- AAMA 501.1
- AAMA 501.2.
- AAMA 501.3

9. Brick Institute of America - Technical Notes

10. CSI (Construction Specifications Institute), Project Resource Manual, published by CSI, 2004 edition.
Joint Sealers: CSI Monograph Series 12/991

11. Construction Waterproofing Handbook, published by McGraw-Hill, written by Michael T. Kubal, 2000

12. FM Global publications

13. Handbook of Accepted Roofing Knowledge (NRCA)

14. The Manual of Below-Grade Waterproofing Systems, Henshell, published by John Wiley & Sons

15. Moisture Analysis and Condensation Control in Building Envelopes by Heinz R. Trechsel, 2001

16. NRCA Roofing and Waterproofing Manual, 5th edition, published by National Roofing Contractors Association, 2001.

17. OSHA CFR 29 Part 1926 Subpart M

18. Proceedings from RCI Building Envelope Symposium, published by RCI, Inc., 1997-2004

19. Principles of Design and Installation for Plaza Waterproofing Systems by Ruggiero & Rutila, SGH

20. RCI Code of Ethics, adopted by RCI, Inc.

21. RCI Manual of Practice, Volume III, Published by RCI, Inc., 2003

22. RCI waterproofing Theory: educational course and manual

23. SMACNA, Sixth Edition, published by Sheet Metal & Air Conditions Contractors National Association, December 2003

24. SPRI (Sheet Membrane & Component Suppliers to the Commercial Roofing Industry)

ANSI-SPRI RP-4-2002 Wind Design Standard for Ballasted Single-ply Roofing Systems

25. Sealant Waterproofing Restoration Institute (SWRI)

Below-Grade Waterproofing Manual

Building Restoration and Maintenance Manual

Sealants: The Professionals Guide

26. Standard Handbook for Civil Engineering, Merrit, 1976 published by McGraw-Hill
27. UL Standards
 - UL 790 Tests for Fire Resistance of Roof Covering Materials
 - UL 580 Tests for Uplift Resistance of Roof Assemblies
28. Underground Waterproofing, published by Earth Integrated Technics, Inc., copyright 1983, by Brent Anderson
29. Understanding Dampness by Trotman, Sanders, & Harrison
30. Waterproofing the Building Envelope, Michael T. Kubal, McGraw-Hill, copyright 1983

PART 2

Part 2 of the examination tests your ability to apply waterproofing knowledge to solve problems; knowledge necessary for this test is acquired through reviewing the documents listed above in Part 1 and through practical experience.

A number of comprehensive word problems will be presented for solution. All will be mandatory and the point value for each problem will be identified in the examination booklet.

References used in preparing the problems are the same as those utilized in Part 1. Please understand that any charts or references required for the solution of problems will be provided in the examination booklet. However, if you have never worked a problem on a certain topic during your professional experience, there will probably not be sufficient time for you to both study the information and solve the problem.

Some problems may involve making mathematical computations requiring familiarity with basic algebra, geometry and trigonometry.

Examples of the kinds of problems that may be included on Part 2 are:

1. Identification of the responsibilities of a Waterproofing Consultant, Architect, Owner, and QA observer
2. Review and processing of applications for payment, calculating retainage amounts, alternate bid pricing, proper amounts for unit price work, etc.
3. Development of change order forms including calculation of new Contract Sum, and Contract Time.
4. Determination of coating dry film thickness based on wet film thickness, material quantities, etc.
5. Determination of the size and appropriate type of plaza drain assemblies. Calculating drain capacities and tributary areas.
6. Design of plaza tapered topping systems for drainage, calculating tapered topping slopes and elevations
7. Calculation of dead loads of plaza assemblies and overburden material
8. Calculation of total R-Value of plaza assemblies
9. Knowledge of energy codes and determining required insulation values for plaza deck assemblies
10. Knowledge of sealant joint selection, and design of sealant joint width and depth
11. Calculation of moisture and thermal movement of building components
12. General knowledge of failure analysis and leak detection, including water testing methods
13. Knowledge of plaza systems and material
14. Knowledge of AIA standard conditions of contract, agreement forms, and contract administration forms
15. Knowledge of CSI specification formats and CSI contract administration forms
16. Knowledge of subsurface drainage systems
17. Knowledge of test methods for substrate moisture emission, and calculating test results

RCI REGISTRATION (RWC) Program

Following are names and numbers for reference material cited in the RWC Study Guide

American Architectural Manufacturers Association Schaumburg, Illinois	847-303-5664
American Society of Civil Engineers Reston, VA	800-548-2723
ASTM West Conshohocken, PA	610-832-9585
Construction Specification Institute (CSI) Alexandria, VA	800-689-2900
FM Global Norwood, MA	781-255-6681
National Roofing Contractors Association (NRCA) Rosemont, IL	800-323-9545
RCI, Inc. Raleigh, NC	800-828-1902
Sealant, Waterproofing, & Restoration Institute Kansas City, MO	816-472-7974
Sheet Metal and Air Conditioning Contractors National Assn. Chantilly, VA	703-803-2980
Sheet Membrane & Component Suppliers to Commercial Roofing Ind. Waltham, MA	781-647-7026
Underwriters Laboratories, Inc. North Brook, IL	877-854-3577

PART 1

SAMPLE QUESTIONS

Several questions are provided for some of the categories of the examination. Each is an actual question taken from previous examinations.

Domain # I Condition Assessment

1. Which of the following are documents for construction projects for limited scopes and small projects?
 - A. B 801/901
 - B. AIA A101/201
 - C. AIA G702/703
 - D. AIA B151/155

2. What are “As-Built” drawings?
 - A. Drawings provided by the manufacturer, attached to the warranty.
 - B. Drawings provided during the submittal phase reflecting the proposed construction.
 - C. Drawings maintained by the Owner reflecting all changes and modifications after construction.
 - D. Drawings provided by the Contractor during contract close-out phase reflecting the actual construction.

3. The majority of waterproofing leaks are attributable to causes other than material or system failures. What is the cause of the remaining waterproofing leaks?
 1. Wrong system being specified for in-place service requirements
 2. Inadequate preparatory work
 3. Incompatible materials being transitioned together
 - A. 1 only
 - B. 1 & 2 only
 - C. 2 & 3 only
 - D. 1, 2, & 3

4. What product would most likely be installed on the top surface of the ramp area of a concrete parking deck?
 - A. siloxane
 - B. epoxy resin
 - C. polyurethane
 - D. hot rubberized asphalt

5. What are the three basic ingredients in concrete?
 - A. Portland cement, lime, and water siloxane
 - B. Portland cement, aggregate, and water
 - C. Portland cement, aggregate, and add mixture
 - D. Portland cement, additive for curing and water

6. The water table level must be determined by accurate soil borings and results corrected for seasonal variations. In which of the following months should the designer be aware that soil borings taken may not be accurate?
 - A. April, October & January
 - B. July, August & December
 - C. January, February & March
 - D. October, November & December

7. Which of the following construction assemblies is the most suited to be tested for moisture with the use of a capacitance meter?
 - A. metal clad wall panels
 - B. precast concrete parking deck
 - C. paver/pedestal plaza assembly
 - D. below-grade CMU wall with gypsum sheathing

8. A consultant notices a leak below the junction of a building/plaza intersection, looking up from the garage level below. What action would be the first step in identifying the source of the leak?
 - A. flood testing the area
 - B. visually inspecting the location
 - C. reviewing applicable contract drawings
 - D. locating the leak location on the plaza level

9. During the design phase, what is the best method for addressing costs associated with repairs with unknown quantity?
 - A. issuing change orders
 - B. including a lump sum allowance amount in bid
 - C. including unit costs and quantity allowances in bid
 - D. negotiating with the Contractor once the repair quantity is known

10. When preparing a condition assessment report, what information would be included in the “background section” of the report?
1. building description/location
 2. cost estimate
 3. name of building design professional
 4. waterproofing system components
- A. 1 only
B. 1 & 2 only
C. 1, 2, & 4 only
D. 2, 3, & 4 only

Domain # 2 Design

11. What effect does an Owner Controlled Insurance Program (OCIP) generally have on the Waterproofing Consultant’s insurance coverage?
- A. reduces the Consultant's design liability
B. increases the Consultant's design liability
C. provides primary coverage for the Consultants design liability
D. reduces the basis for calculating the Consultant's general liability premium
12. When installing one part urethane sealant, what type of backer rod is typically specified?
1. open cell backer rod
 2. close cell backer rod
 3. neoprene rubber backer rod
- A. 2 only
B. 3 only
C. 1,& 2 only
D. 1, 2,& 3
13. Under what Division of the CSI Masterformat Manual would epoxy grout injection be specified?
- A. Division 3
B. Division 5
C. Division 7
D. Division 9

14. Which of the following below grade waterproofing systems require back filling immediately after installation?
- A. hydro clay systems
 - B. fluid applied systems
 - C. cementitious systems
 - D. thermoplastic sheet membrane systems
15. What division of the CSI specifications includes concrete placement and finishing?
- A. Division 2
 - B. Division 3
 - C. Division 5
 - D. Division 7
16. Below grade waterproofing does all of the following except?
- 1. Protection of structural/foundation
 - 2. Control of drainage of both surface and groundwater
 - 3. Protection of the interior equipment and finishes below grade
 - 4. Protection from environment wind driven rain, ultraviolet weathering and acid rain
- A. 2 & 3 only
 - B. 1, 2, & 3 only
 - C. 1, 3, & 4 only
 - D. 1,2,3, & 4
17. What manual provides information regarding building code requirements?
- A. IBC
 - B. ASTM
 - C. SWRI
 - D. SMACNA
18. For removing and existing waterproofing membrane, which of the following division of CSA specification specifies the demolition means & methods?
- A. Division 1
 - B. Division 2
 - C. Division 7
 - D. None, the demolition means & methods should not be specified by the Architect/Engineer/Consultant
19. On earth-covered slabs, where should drainage courses be located?
- A. below the soil
 - B. below the insulation
 - C. above the insulation
 - D. above and below the insulation

20. Consider the following equation: what is it used to calculate?

$$T_v = \left[T_i - \frac{R}{\sum R} (T_i - T_o) \right]$$

- A. Long term thermal resistance of insulation board
- B. Transpermeance of a vapor barrier membrane
- C. Temperature at the vapor retarder membrane
- D. Water vapor transmission rate

21. Which of the following are advantages of fully adhered waterproofing membranes over loose laid waterproofing?

1. less probability of slippage during backfilling
2. ease of locating leaks
3. isolation from dynamic joint movement
4. not as critical of substrate finish

- A. 1 & 2 only
- B. 1 & 4 only
- C. 2 & 4 only
- D. 3 & 4 only

22. Who usually designs the below grade, under slab drainage system?

- A. Owner
- B. Architect
- C. Civil Engineer
- D. Waterproofing Consultant

23. What methods are utilized to improve the wind resistance of concrete pavers in a ballasted system?

1. install pavers in straight line fashion
2. install clips and adhesive between pavers
3. install stone ballast around penetrations
4. utilize edge attachment mechanisms at perimeters

- A. 1 & 2 only
- B. 2 & 3 only
- C. 2 & 4 only
- D. 3 & 4 only

24. What is the common UL test for fire endurance of specific waterproofing materials?
- A. UL-263
 - B. UL-580
 - C. ASTM D-93
 - D. ASTM E-669
25. Which of the following are typically not included in warranties provided by waterproofing manufacturers?
- A. removal of overburden or components
 - B. repair of leakage due to defective materials
 - C. repair of leakage due to defective workmanship
 - D. limitations of total cost exposing under warranty
26. In which division of CSI Masterformat are Addenda placed?
- A. bid form
 - B. Division 0
 - C. Division 1
 - D. None - Addenda are not placed in any divisions
27. During a pre-bid conference, which of the following are Contractors allowed to do?
- A. submit product substitutions
 - B. determine time and date of bid
 - C. request information on means and methods
 - D. ask questions regarding the relationship between the specifications and drawings
28. Which of the following statements is accurate regarding Addenda?
- A. Addenda cannot be used to modify the invitation to bid.
 - B. Addenda can be only issued during the bidding phase of the project, and not after the contract is signed.
 - C. Addenda generally modify contract documents and can be issued during bidding or construction phase of the project.
 - D. It is not necessary that an addendum indicates it supersedes and supplements all portions of the bidding documents which change conflicts.

Domain # 3 Contract Administration & Quality Assurance

29. What is the primary purpose of value engineering?
- A. to reduce overall cost of the project
 - B. to validate overall design commissioning of the project
 - C. to improve the quality of products incorporated into the project
 - D. to balance cost between quality and functionality of the project

30. Who sets the criteria for Contractor qualifications?
1. Waterproofing Consultant
 2. Manufacturer
 3. Owner
 4. Contractor
- A. 1 & 3 only
B. 2 & 3 only
C. 1, 2 & 3 only
D. 1, 2, & 4 only
31. What is the difference between an “Addendum” and an “Amendment”?
- A. Amendments change the bid dates.
B. Amendments can only be issued by the Owner.
C. The Amendment changes the contract documents prior to the bid.
D. The Addendum modifies the contract documents prior to award contract.
32. What is the purpose of reviewing the Schedule of Values?
- A. to determine the time for payments
B. to verify costs for specific work items
C. to determine overhead of SubContractors
D. to determine profits due to General Contractors
33. Which of the following are addressed to the pre-construction conference?
1. site requirements
 2. administrative requirements
 3. safety requirements and regulations
 4. submittals
- A. 1, 2 & 3 only
B. 1, 2 & 4 only
C. 2, 3 & 4 only
D. 2, 3 & 4 only
34. What is the difference between a construction change directive and a change order?
- A. A change order comes at the end of the job, and the construction change directive comes during the job.
B. A change order includes dollar amounts, a construction change directive is issued for minor changes that do not impact cost or contract time.
C. A change order is signed by the Owner, Architect, and Contractor. The construction change is only signed by the Owner and Architect only.
D. None, they are essentially the same.
35. Which of the following asphalt based materials can be applied to uncured/curing concrete?
- A. coal tar
B. emulsions
C. solvent based
D. polymeric asphalt

36. What AIA documents are most commonly used for Contractor submission progress billing?
1. AIA Doc 709
 2. AIA Doc 202
 3. AIA Doc 702
 4. AIA Doc 703
- A. 2 & 3 only
B. 3 & 4 only
C. 1, 3 & 4 only
D. 1, 2, 3 & 4 only
37. In what phase of the project are partial lien waivers from the Contractor submitted?
- A. with substantial completion
B. with final application for payment
C. at the start of project with submittals
D. with monthly application for payment
38. The design professional is asked to perform an inspection to establish a date for substantial completion. What is required of the Contractor to initiate this process?
- A. Waiting for the work to be 98% complete.
B. Submitting the final application for payment with all releases.
C. A notification that no leaks exist and all materials and systems are protected.
D. A notification of substantial completion with the list of incomplete items as provided by the Contractor.
39. Which of the following needs verification prior to processing the Contractor's final payment application?
- A. All punch list items have been completed.
B. Contractor certification that contract requirements are complete.
C. General Contractor final payments from the Owner has been received.
D. Confirmation that all contract requirements have been completed according to the contract documents.
40. Which of the following should be included in the project close-out documentation?
- A. Q/A documents, pictures and release from Owner
B. warranties, maintenance manuals, as built drawings
C. letter from Contractor verifying work has been completed
D. stamped documents confirming work is completed and final application for payment

Domain # 4 Testing

41. Which ASTM Committee has jurisdiction of waterproofing and dampproofing system?
- A. C15
B. C24
C. D04
D. D08

42. Which of the following is the most appropriate test when determining suitability of concrete substrate for waterproofing application?
- A. chemical testing
 - B. compressive strength
 - C. Schmit Hammer testing
 - D. petrographic examination
43. Why is proper coating thickness important in a fluid applied waterproofing application under a concrete topping slab?
- A. reduce impact damage
 - B. improve wear resistance
 - C. allow membrane to bridge hairline cracks
 - D. reduce chalking and premature aging of membrane
44. Which of the following non-destructive methods can be used to most accurately locate reinforcing steel in concrete?
- A. stud finder
 - B. impact echo
 - C. hammer sounding
 - D. R-Meter/Pachometer
45. Which of the following principals does an R-meter/Pachometer use?
- A. magnetism
 - B. conductivity
 - C. sound waves
 - D. thermal resistance
46. Which of the following best defines water table?
- A. The depth in the soil where water is present during fall.
 - B. The elevation with the soil where water is flowing freely.
 - C. The depth in the soil where water is present during spring.
 - D. The elevation at which the soil is at atmospheric pressure.
47. A structural slab has been designed for a maximum deflection of $L/600$. The spacing between the beams running North-South are 60 feet -6 inches. The beams running East-West are spaced 40 feet apart. The slab is 6 inches thick. What is the maximum slab deflection?
- A. 0.067 inch
 - B. 0.1 inch
 - C. 0.8 inch
 - D. 1.21 inches

Domain # 5 Professional Responsibility

48. Which of the following activities according to OSHA regulations is applicable to below-grade waterproofing?
- A. proper storage of excavated dirt
 - B. length of breaks to prevent fatigue
 - C. the maximum depth of excavation for worker safety
 - D. the support of earthen walls during excavation and application
49. You are replacing a plaza waterproofing system that does not have a tapered topping slab. The existing plaza waterproofing system and topping slab weigh 30 PSF. The new waterproofing system will have tapered topping slab. At the drains (the shallowest areas), the waterproofing system, tapered topping and the topping slab weigh only 15 PSF. At the thickest area, the total system weight will be 35 PSF. The average system weight will be 25 PSF. Your client is an Architect who is serving as the prime consultant for the project. What actions, if any should you take?
- A. Inform the Owner
 - B. Inform the Architect
 - C. Inform the Structural Engineer who is another sub-consultant to the Architect
 - D. Since the average weight of the system is less than the original system, you are not obligated to inform anyone.
50. Continuing education is a vital part of maintaining your current knowledge & understanding of the waterproofing industry. Which of the following means would be acceptable for maintaining CEU requirements?
- 1. attending conventions presented by RCI, NRCA, etc.
 - 2. attending Manufacturer's product seminars
 - 3. participating in community based service programs
 - 4. on-line learning programs
- A. 1, 2 & 4 only
 - B. 1, 3 & 4 only
 - C. 2, 3 & 4 only
 - D. 1, 2, 3, & 4 only

STUDY REVIEW

Answers are provided on the following page. Note your errors. Review the appropriate document (s) in those areas to better understand the rationale behind the indicated error. Take advantage of the programs provided by RCI, including courses on the national and regional levels.

PART 1
ANSWERS FOR THE SAMPLE QUESTIONS

I. Condition Assessment

- 1. D
- 2. D
- 3. D
- 4. C
- 5. B
- 6. B
- 7. D
- 8. D
- 9. C
- 10. A

III. Contract Administration and Quality Assurance

- 11. D
- 12. A
- 13. A
- 14. A
- 15. B
- 16. D
- 17. A
- 18. D
- 19. D
- 20. C
- 21. A
- 22. C
- 23. C
- 24. A
- 25. A
- 26. B
- 27. D
- 28. B

II. Design

- 29. D
- 30. C
- 31. D
- 32. B
- 33. A
- 34. C
- 35. B
- 36. B
- 37. D
- 38. D
- 39. D
- 40. B

IV. Testing

- 41. D
- 42. D
- 43. C
- 44. D
- 45. A
- 46. D
- 47. D
- 48. D
- 49. B
- 50. A