

**CITY OF DURHAM**  
**DEPARTMENT OF WATER MANAGEMENT**  
**CROSS CONNECTION CONTROL**

Site/Mailing Address - 1600 Mist Lake Drive, Durham, NC 27704

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**CROSS CONNECTION CONTROL (CCC) TRAINING COURSES**



**PRACTICAL “HANDS ON” WET LAB**



**TRAINING ROOM**

The City of Durham’s Cross Connection Control (CCC) Program is a vital component of the City’s efforts to ensure protection of the potable water system. Therefore, proper training of individuals performing installation and testing of backflow prevention assemblies is crucial to the success of the program. Durham offers both an initial certification course as well as a recertification course. A forty-hour, five- day course is offered to persons seeking certification as a backflow preventer assembly tester. Testers must renew certification every two years; to accommodate this requirement, a sixteen-hour, two-day recertification course is held to keep certified tester’s skills and regulatory knowledge current. Other interested parties may request free seminars to learn more about the importance of an effective cross connection control program in their community.

Effective on 12/31/2017 and beyond, a policy change has been adopted by the group of North Carolina Training Schools recognized by the City of Durham. It is in agreement with all the schools that we maintain for original certification that the expiration date established be no more than two years from the date of passing the certification class.

For re-certification, the expiration date shall be no more than three years from the date of passing the re-certification class. If the re-certification class is missed and the tester certification expires, the tester has up to an additional year to get re-certified before they will be required to take the full certification class. If a tester’s certification expires, they are not valid to test backflow assemblies until they get re-certified or retake and

successfully complete the full certification class.

In accordance with the NC General Statutes § 87-21, subsection (c) and 21 NCAC 50.0506 anyone who interrupts the water supply is required be properly licensed. When testing a backflow preventer one or both shut-off valves on the backflow preventer is required to be turned off during testing, therefore interrupting the water supply. North Carolina has a statewide licensing program for Plumbing, Utility, and Fire Protection Contractors. Part of the State licensing General Statute requirements is that these individuals are properly trained and certified to perform trouble shooting beyond the routine annual testing. By law, installation and repairs of backflow preventers can only be performed by a properly licensed person, carrying this requirement over to include testing allows the City of Durham to ensure quality work is carried over to each customer.

### **Initial Certification**

This **five-day** course is designed to assure that participants develop the skills and knowledge necessary to conduct effective backflow prevention installation, testing, and if necessary, repairs on all major types of backflow prevention assemblies. Theoretical and practical applications, as well as hands on testing of backflow prevention assemblies are covered. To attain certification, students must pass the written exam AND the practical exam.

#### **Student Prerequisites:**

- Persons wishing to become a certified backflow tester must meet the requirements listed below to obtain a tester certification number and tester grade designation.
- Persons certified as a tester perform testing within the City of Durham's distribution system.
- Other municipalities in North Carolina – through a mutual reciprocity agreement – accept testers certified by the City of Durham's program.
- For original certification that the expiration date established will be no more than two years from the date of passing the certification class.

### **THE THREE GRADES OF TESTER CERTIFICATION ARE AS FOLLOWS:**

Tester Grade "A" - Issued to fire sprinkler contractors licensed by the State of North Carolina for the purpose of testing any backflow preventer on a fire protection system. Testers may be included on the City of Durham's certified tester list which is made available to customers.

Tester Grade "B" - Issued to personnel who work at facilities for the purpose of testing backflow preventers on their premises only; and testers, without contractors licenses, who test in other jurisdictions.

Tester Grade "C"- Issued to contractors (plumbing & utility), licensed by the State of North Carolina to engage in backflow testing as a business and that possess approved test equipment. Grade "C" testers may be included on the City of Durham's certified tester list, which is made available to customers.

**PLEASE NOTE: Individuals working under someone's license must be a bona fide employee of that firm with taxes withheld as defined in 21 NCAC 50 .0512 EMPLOYEES EXEMPTED FROM LICENSURE.**

### **Recertification**

This **two-day** course is designed to assure that participants maintain the skills and knowledge necessary to conduct effective backflow prevention installation, testing and if necessary, repairs on all major types of backflow prevention assemblies. Theoretical and practical applications, as well as hands on testing of backflow prevention

assemblies are reviewed. Regulatory updates and current industry practice are included in this course.

**Student Prerequisites:**

- For re-certification, the expiration date shall be no more than three years from the date of passing the re-certification class.
- If the re-certification class is missed and the tester certification expires, the tester has up to an additional year to get re-certified before they will be required to take the full certification class.
- If a tester's certification expires, they are not valid to test backflow assemblies until they get re-certified or retake and successfully complete the full certification class.

To register for the recertification course, students must have successfully completed a City of Durham backflow prevention certification course, or an approved backflow certification course offered by one of the reciprocity schools. These schools are as follows; Charlotte Mecklenburg Utilities Department (City of Charlotte), Greenville Utilities (Greenville NC), City of Raleigh, City of Greenville and NC Rural Water (Carthage NC).

**Student Contribution:**

Full attendance of all sessions is required for satisfactory completion of the certification or recertification course. Students will be required to bring a small standard tip screwdriver to class and should dress for a wet lab environment. Students should bring a highlighting marker, pencils and paper to class. Persons with approved test equipment should bring the equipment with them to the course.

Notebooks and other materials will be provided for the certification course; however, recertification students should bring their old notebooks to class so that they can be updated with current literature.

**Student Evaluation/Successful Course Completion:**

Both a passing grade (70% or higher) on the written exam and satisfactory completion of the practical exam are necessary to successfully complete a course. No student will be allowed to take the practical exam until they have successfully completed the written exam. Students who fail the written exam must repeat the entire course and resubmit another application form and payment. Students who fail the practical exam must resubmit application form and payment but will not be required to retake the written exam or attend the classroom segments of the course if they enroll in the next scheduled course offering. Students not enrolling in the next scheduled course offering must repeat the entire course.

**Tester Orientation Requirement**

Successful completion of the Durham Orientation class (already included in Courses taught by the City of Durham) is mandatory for every tester that wishes to perform backflow preventer testing in the City of Durham's jurisdiction (including testers approved through reciprocity). The orientation class will cover local tester requirements and expectations. Copies of Durham's Cross Connection Control Regulations will be provided during the class and time will be allotted for tester questions.

**Tester Ethics Agreement**

Upon enrollment of all certification, recertification and orientation classes, all testers must sign/agree to a testers ethics agreement to become eligible to test backflow preventers in Durham. Testers meeting all criteria may request to be advertised on the City of Durham third-party approved electronic vendors testers list, which is made available to Durham customers. Upon successful completion of the course students will be given directions on how to enroll.

## CITY OF DURHAM TRAINING COURSE REQUIREMENTS

1. A completed electronic application which includes the checklist form and payment must be received by the City of Durham's Cross Connection Control Section **thirty days prior to the first day of class** in which the student has registered to attend. **Applications and payment received less than thirty days prior to the first day of class will be returned to the sender.** No space will be allotted for a student that does not meet these criteria. Notices of acceptance will be corresponded by mail, email, or phone call to registered students 1) upon enrollment being accepted and 2) the week prior to the first day of the scheduled course.
2. The minimum enrollment for a school to be held is nine students. The maximum class size will be limited to eighteen (18) for certification and re-certification. Applications and payment will be processed in the order received.
3. Applicants that do not show up for class will forfeit the course fee and must resubmit another payment and application if they wish to attend in the future. Students missing segments of a course may audit the remainder of the course but will not be allowed to take the exams. Applicants may send a qualified designee in their place if they find out that they cannot attend, request shall be received to [CCCProgram@durhamnc.gov](mailto:CCCProgram@durhamnc.gov) no later than **15 days prior to the first day of class.**
4. **All fields on the online applications including checklist items such as 1) must be complete and submitted with payment. If all the proper documentation is not submitted with the application and payment, the application will be returned.**
5. Applicants canceling within thirty days of the course will receive a 50% refund of the application fee.
6. All City of Durham facilities have a smoke free environment.
7. All students must park in designated cross connection control parking.

### Course location and meeting times:

Courses are held at the Department of Water Management Administration and Maintenance Facility located at 1600 Mist Lake Drive in Durham (SEE ATTACHED MAP). Classes begin at 8 AM and end at 4PM each day and are taught according to the attached course agenda. No training will be scheduled when a holiday falls within the meeting schedule.

**PLEASE NOTE: Students who arrive earlier than 7:45am will not be allowed into the security gate for security purposes.**

**For additional information contact:**  
**Cross Connection Control Staff**  
**Phone: (919) 560-4194**  
**E-mail: [CCCProgram@durhamnc.gov](mailto:CCCProgram@durhamnc.gov)**

# CROSS CONNECTION CONTROL/BACKFLOW PREVENTION TESTER

## CERTIFICATION COURSE AGENDA

### MONDAY

8:00 - 8:30 a.m.	Welcome, introduction and course overview
8:30 - 10:00 a.m.	Cross connections
10:00 - 10:15 a.m.	Break
10:15 - 12:00 noon	Cross connections
12:00 - 1:00 p.m.	Lunch (on your own)
1:00 - 2:00 p.m.	Mechanical equipment for cross connection control
2:00 - 2:45 p.m.	Pressure vacuum breaker (operation, testing and test
2:45 - 3:00 p.m.	Break
3:00 - 4:00 p.m.	Wet lab (pressure vacuum breaker)

### TUESDAY

8:00 - 10:00 a.m.	Double check valve assembly (operation, testing and test forms)
10:00 - 10:15 a.m.	Break
10:15 - 12:00 p.m.	Wet lab (double check valve assembly)
12:00 - 1:00 p.m.	Lunch (on your own)
1:00 - 1:45 p.m.	Tester responsibilities and special conditions
1:45 - 2:45 p.m.	Troubleshooting and maintenance (double check valve assembly)
2:45 - 3:00 p.m.	Break
3:00 - 4:00 p.m.	Local program requirements

### WEDNESDAY

8:00 - 10:00 a.m.	Reduced pressure zone assembly (operation, testing and test forms)
10:00 - 10:15 a.m.	Break
10:15 - 12:00 p.m.	Wet lab (reduced pressure zone assembly)
12:00 - 1:00 p.m.	Lunch (on your own)
1:00 - 2:45 p.m.	Troubleshooting and maintenance (reduced pressure zone assembly)
2:45 - 3:00 p.m.	Break
3:00 - 4:00 p.m.	Wet lab (reduced pressure zone assembly)

### THURSDAY

8:00 - 10:00 a.m.	Wet lab Practice (all assemblies)
10:00 - 10:15 a.m.	Break
10:15 - 12:00 p.m.	Wet lab Practice (all assemblies)
12:00 - 1:00 p.m.	Lunch (on your own)
1:00 - 2:45 p.m.	Wet lab Practice (all assemblies)
2:45 - 3:00 p.m.	Break
3:00 - 4:00 p.m.	Course Review

### FRIDAY

8:00 - 9:45 a.m.	Written exam (closed book)
9:45 - 12:00 p.m.	Practical exam (closed book, no test procedures allowed in lab during exam)
<b>1:30 - 3:00pm</b>	<b>Tester Orientation</b>

## CROSS CONNECTION CONTROL/BACKFLOW PREVENTION TESTER RECERTIFICATION AGENDA

### THURSDAY

8:00-10:00 a.m.	Wet Lab Practice-All Assemblies
10:00-10:15 a.m.	Break
10:15-11:00 a.m.	Wet Lab Practice-All Assemblies
11:00-12 noon	Classroom refresher and new tester information
12:00-1:00 p.m.	Lunch (on your own)
1:00-2:45 p.m.	Classroom refresher and new tester information
2:45-3:00 p.m.	Break
3:00-4:00 p.m.	Classroom refresher and new tester information

### FRIDAY

8:00-9:00 a.m.	Written Exam (closed book)
9:00-1:00 p.m.	Practical Exam (closed book- no test procedures allowed in lab during exam)
<b>1:30 - 3:00 p.m.</b>	<b>Tester Orientation</b>

\*\* Attendance on Thursday and Friday is required.

**APPROVED BACKFLOW PREVENTER TEST EQUIPMENT**

<b>BRAND AND MODEL #</b>	<b>TYPE OF GAGE</b>	<b>PHONE #</b>
Conbraco 40-200-TKU	3 Valve Differential	(864)578-4334
Conbraco 40-200-TK5U	5 Valve Differential	(864)578-4334
Duke E-Z 900	2 Valve Differential & Duplex	(714)581-7200
ITT Barton 246	Differential	(800)458-3492
BFTMidwest 830	3 or 5 Valve Differential	(704)522-9873
Midwest 835	3 or 5 Valve Differential	(704)522-9873
Midwest 844	3 or 5 Valve Differential	(704)522-9873
Midwest 845	3 or 5 Valve Differential	(704)522-9873
Promaster ASRP-4	3 or 5 Valve Differential	(800)776-1464
Watts TKDP	2 Valve Differential & Duplex	(704) 525-3388
Watts TKDL	2 Valve Differential & Duplex	(704) 525-3388
Watts TK-99D	3 Valve Differential & Duplex	(704) 525-3388

**NOTES:**

**THE PURCHASE OF A BLEEDER VALVE KIT AND VERTICAL TUBE KIT IS REQUIRED FOR PERFORMING THE DOUBLE CHECK VALVE ASSEMBLY TEST. THESE KITS ARE AVAILABLE FROM THE EQUIPMENT MANUFACTURER.**

- 1) PROVIDE AT LEAST 1 PIECE OF TEST EQUIPMENT PER 2 TESTERS IN THE TRAINING SCHOOL TO ENSURE THAT STUDENTS HAVE ENOUGH HANDS ON PRACTICE TIME DURING THE COURSE.

**Approved Test Kit Calibration Centers**

Test kit calibration is required on an annual basis. Proof of test equipment calibration must be submitted for each piece of test equipment being used. Fax or mail a copy of the laboratory calibration results to theDurham CCC Office to maintain approved tester status.

**For Watts TKDP, TKDL, TK99D and Duke 1000 Test Kits**

<p><b>BAVCO</b> 20435 South Suzanna Road Long Beach, California 90810 Phone: (800) 458-3492 Fax: (310) 639-0721 Contact: Mr. John Gould</p>	<p><b>Nicholson Lab, Inc.</b> 1423 Queen City Avenue Cincinnati, OH 45214 Phone: (513) 251-4343 Fax: (513) 251-4388 Contact: Mr. Daniel R. Jurkowitz, Jr.</p>
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**For Midwest 830, 835, 844 and 845 Test Kits**

<p><b>Specialty Valve &amp; Controls Company</b> 9115-K Old Statesville Rd. Charlotte, NC 28269 Phone: (704) 522-9873 Email: office@specialty.com</p>
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Note: 1) Always send equipment via ground track or ensure that the cargo compartments climate controlled before shipping unit by air to avoid freeze or pressure damage to the test equipment (for example, temperatures can reach -40 F at 20,000 feet altitude in the cargo compartment of a plane).

## **TRAINING FACILITY LOCATION**

Department of Water Management  
Administration/Plant Maintenance Facility  
**1600 Mist Lake Drive, Durham, NC 27704**  
Phone: 919-560-4194

### **From Raleigh/RTP area:**

1. Follow Wade Ave., I-40 WEST and I-885 to Durham County.
2. Use the right 2 lanes to exist 279B for NC-147 North towards Durham/Downtown
3. Merge on **I-885**
4. Keep **RIGHT** at the fork to stay on **I-885**
5. Take **exit 13** to merge onto I-85 North/US-15N towards Petersburg
6. Take **exit 179**, E. Club Blvd. At top of exit, turn **LEFT** onto E. Club Blvd.
7. Turn **LEFT** onto Camden Avenue at the first intersection after crossing back over I-85 a. This is directly across from the City's Waste Disposal & Recycling Facility
8. Turn an immediate left onto Mist Lake Drive, United Energy Gas is on the corner
9. Follow the paved road, through the gated entry. Stop at gate and let the attendee know you are here to attend the Backflow/ Cross Connection Class
10. Stay straight into the parking lot and park near the main entrance near flag poles
11. Enter at the main entrance and please sign in on the visitor log.

### **From Greensboro/points west:**

1. Take I-85 into Durham and continue north on Hwy 70E/I-85.
2. Bear left at the split to stay on I-85 (Hwy 70 bears right) towards Oxford and Richmond.
3. Take exit 179, E. Club Blvd. At top of exit, turn left onto E. Club Blvd.
4. Follow directions from #5 - #8 above.



## SITE MAP FOR CITY OF DURHAM CROSS CONNECTION CONTROL TRAINING

### Instruction

1. Park near the main entrance.
2. Once inside the lobby, please sign-in at the main desk.
3. Class will be held in Room #2002A. Wet lab is in Room # 3305 directly across the hallway.

