

from the sun by canvas covering until sufficient set has taken place to permit of the placing of the earth covering or the water ponds. The period for retaining such moist covering will depend on the temperatures, but a general tendency is to leave the road closed for curing for a longer period than heretofore. Instead of a fourteen-day minimum, some specifications wisely provide for a twenty-one day minimum period for curing. There is a temptation to be impatient, and to permit of rapid curing and drying and the opening to traffic after a shorter period than mentioned above, but this is most certain to be followed by ill effects to the wearing of the road as time, perhaps years, go on.

#### Expansion Joints and Cracking

There is an increasing practice of omitting entirely expansion joints in the construction of concrete roads. The chief advantage gained is the avoidance of an uneven surface at the joints, which is only avoided by extreme care in finishing in the vicinity of the joint when used. Expansion joints in usual practice are placed from 25 ft. to 50 ft. apart, depending on the width of the pavement, and also having regard to the season of the year at which the concrete is placed.

Then there is the subject of cracking, longitudinal and otherwise, and a whole paper might be written on the probable causes and possible cures of such cracking. I would only say that, if proper drainage facilities are afforded for the subsoil foundation, and if the concrete is properly constructed according to best methods, the percentage of cracks occurring will be so small and the remedy and annual maintenance so simple and cheap, that the cracking in cement concrete roads will not assume any great importance.

The writer wishes to thank A. N. Johnson, consulting highway engineer, Portland Cement Association, for copies of suggested specifications and of Prof. Abrams' tables.

#### CONTRACTORS TO PAY ONE PER CENT.

THE Inland Revenue Office, Ottawa, has issued the following rulings respecting the tax of 1% imposed on sales by manufacturers, wholesalers and importers as it will affect contractors.

"Contractors and sub-contractors will have to pay 1% tax on materials used by them.

"Products of the soil, such as sand, gravel and unprocessed stone, are not taxed. Lime, cement and stone which is quarried, crushed or which passes through any process, come under the tax.

"Building contractors and sub-contractors, though technically manufacturers are regarded for the purposes of the tax as retailers, selling to consumer. The tax is not chargeable on the amount of the contract, either between the sub-contractor and contractor or between the contractor and the owner.

"If a contractor or sub-contractor manufactures material for his work, such as metal cornices, sash and door frames, iron railing, etc., he is required to pay the tax on the cost of manufacture, including labor. He is not required to pay the tax on installation.

"The tax is primarily one upon materials, and is not intended to be a tax upon labor. Labor used in the installation of materials is not taxed, but the tax does apply to labor used in the manufacture of materials."

The twenty-third annual meeting of the American Society for Testing Materials will take place at Asbury Park, N.J., June 22-25, 1920, with headquarters at the Monterey Hotel. A full technical program with an ample admixture of social features is being provided. Amongst the papers to be read is one on "The Volume—Moisture Relation in Sand and a Method of Determining Surface Area Based Thereon," by R. B. Young and W. D. Walcott of the staff of the Hydro-Electric Power Commission of Ontario.

#### FINAL PROGRAM FOR THE CONVENTION OF THE AMERICAN WATER WORKS ASSOCIATION AT MONTREAL

PROMPTLY at 8 a.m., Monday, June 21st, registration will begin for the big convention of the American Water Works Association at Montreal, and from then till the break-up on Friday evening, there will be no dull moment. As announced in our issue of April 29th, headquarters of the convention will be at the Windsor Hotel, the meeting room, exhibits, secretary's office and committee rooms all being on the second floor.

A full and varied program has been provided, and in order that it may be carried out, meetings will be called strictly ON TIME, and the program proceeded with in accordance with the adopted schedule.

The final program follows:—

##### Monday, June 21st

###### Forenoon

Registration begins at 8 o'clock. Members are urged to register early, so that the secretary may be in possession of all necessary information concerning the attendance.

###### Afternoon

Meeting of executive committee. Meeting of standing and special committee.

###### Evening

8 p.m.—Gathering of members and ladies in exhibition hall, Windsor Hotel. Addresses of welcome by His Worship, Mederic Martin, Mayor of Montreal, and R. A. Ross, President of the Engineering Institute of Canada.

8.30 p.m. to 12.00 midnight.—Concert and dancing.

##### Tuesday, June 22nd

###### Forenoon

9 a.m.—Opening of convention. Announcement of officers elected for 1920-1921. New business.

Reading of papers as follows:—

"The Municipal Water Supply of Montreal," by Thomas W. Lesage.

"The Works of the Montreal Water and Power Company," by F. H. Pitcher.

"The Experience in Montreal in the Manufacture of Alum," by James O. Meadows.

###### Afternoon

2 p.m.—"The Water Works of the City of Quebec," by Arthur Surveyer.

"Water Supply Problems in the Province of Quebec," by T. J. Lafreniere.

"The Water Works of St. Johns, New Brunswick," by Frank A. Barbour.

###### Evening

8 p.m.—"Water Works Experiences," by Beekman C. Little.

"Economic Features of Pumping Station Operation," by Leonard A. Day. Illustrated with lantern slides.

"Difficulties in Building the Louisville Pumping Station," by James B. Wilson. Illustrated with lantern slides.

##### Wednesday, June 23rd.

###### Forenoon

8.15 a.m.—Trip through Lachine Rapids for members and ladies as guests of the Water Works Manufacturers' Association.

###### Afternoon

2 p.m.—"The New Water Supply of Winnipeg," by James H. Fuertes and William G. Chace.

President's address, by Carleton E. Davis.

Reports from sections.

Report of the Association's representatives on the American Electrolysis Committee, by Alfred D. Flinn, chairman.

Reports of Committees.—Private Fire Protection Services, by Nicholas S. Hill, Jr., chairman. Official Standards for Water Analysis, by Jack J. Hinman, Jr., chairman. Cold