

Click the Bookmarks tab to the left to use navigation links for this document.

APPENDIX 3.2 CODES AND STANDARDS

LIST OF TABLES

Table Title	Page
Table 3.2-1. Reference Codes and Standards.	3

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Referenced codes and standards are presented alphabetically in Table 3.2-1.

Table 3.2-1. Reference Codes and Standards

AASHTO		American Association of State Highway and Transportation Officials
AASHTO	GDPS-4 1993	"Guide for Design of Pavement Structures"
AASHTO	GREEN BOOK 2001	"A Policy on Geometric Design of Highways and Streets"
AASHTO	GDPSS-4 1998	"Supplement to the Guide for Design of Pavement Structures"
AASHTO	RSDG-3 2002	"Roadside Design Guide", 3rd Edition
AASHTO	HM-23 2002	"The Materials Book-Standard Specifications for Transportation Materials and Methods of Sampling and Testing", 22nd Edition
ACI		American Concrete Institute
ACI	201.2R-01	"Guide to Durable Concrete"
ACI	212.3R-91	"Chemical Admixtures for Concrete"
ACI	232.2R-96	"Use of Fly Ash in Concrete"
ACI	301-99	"Specifications for Structural Concrete"
ACI	318-02 /318R-02	"Building Code Requirements for Structural Concrete and Commentary"
ACI	349	"Code Requirements for Nuclear Safety Related Concrete Structures"
ACI	360R-92	"Design of Slabs on Grade"
ACI	504R-90	"Guide to Joint Sealants for Concrete Structures"
ACI	515.1R-85	"A Guide to the Use of Waterproofing, Damproofing, Protective, Decorative Barriers Systems for Concrete"
ACI	SP-66(94)	"American Concrete Institute – Detailing Manual"
AISC		American Institute of Steel Construction
AISC	2000	"ASD Manual of Steel Construction" 9 th Edition, Vol. 1 & Vol. 2, where ASD represents allowable stress design
AISC	2002	"LRFD Manual of Steel Construction" 3rd Edition, where LRFD represents load and resistance factor design
ASTM		American Society of Testing and Materials
ASTM	A36 /A36M-04	"Standard Specification for Carbon Structural Steel"
ASTM	A48-03	"Standard Specification for Gray Iron Castings"
ASTM	A121-99	"Standard Specification for Zinc-Coated (Galvanized) Steel Barbed Wire"

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

ASTM	A126-04	"Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings"
ASTM	A 181 /A181M-01	"Standard Specification for Forgings, Carbon Steel for General Purpose Piping"
ASTM	A185-02	"Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement"
ASTM	A307-03	"Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile"
ASTM	A325-04	"Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength"
ASTM	A392-96 (2003)	"Standard Specification for Zinc Coated Steel Chain-Link Fence Fabric"
ASTM	A497 /A497M-02	"Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete"
ASTM	A615 /A615M-04a	"Standard Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement"
ASTM	A884/A884M-84	"Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement"
ASTM	A1011-04a	"Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability"
ASTM	A775/A775M-04a	"Standard Specification for Epoxy-coated Steel Reinforcing Bars"
ASTM	C31 /C31M-03a	"Standard Practice for Making and Curing Concrete Test Specimens in the Field"
ASTM	C33-03	"Standard Specification for Concrete Aggregates"
ASTM	C39 /C39M-03	"Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens"
ASTM	C88-99a	"Standard Method of Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate"
ASTM	C94 /C94M-04	"Standard Specification for Ready-Mix Concrete"
ASTM	C125-03	"Standard Terminology Relating to Concrete and Concrete Aggregates"
ASTM	C127-01	"Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate"
ASTM	C128-01e1	"Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate"
ASTM	C131-03	"Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine"
ASTM	C136-01	"Standard Test for Sieve or Screen Analysis of Fine and Coarse Aggregate"
ASTM	C150-04	"Standard Specification for Portland Cement"
ASTM	C171-03	"Standard Specification for Sheet Materials for Curing Concrete"

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

ASTM	C172-04	“Standard Practice for Sampling Freshly Mixed Concrete”
ASTM	C227-03	“Standard Test Method for potential Alkali Reactivity of Cement Aggregate Combinations”
ASTM	C260-01	“Standard Specification for Air-Entraining Admixtures for Concrete”
ASTM	C309-03	“Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete”
ASTM	C494 /C494M-04	“Standard Specification for Chemical Admixtures for Concrete”
ASTM	C535-03e1	“Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles ”
ASTM	C618-03	“Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete”
ASTM	C920-02	“Standard Specification for Elastomeric Joint Sealants”
ASTM	C1567-04	“Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method
ASTM	D75-03	“Standard Practice for Sampling Aggregates”
ASTM	D374-99	“Standard Test Methods for Thickness of Solid Electrical Insulation”
ASTM	D413-98 (2002)e1	“Standard Test Methods for Rubber Property-Adhesion to Flexible Substrate”
ASTM	D421-85 (2002)	“Standard Method for Dry Preparation of Soil Samples for Particle Size Analysis and Determination of Soil Constants”
ASTM	D422-63 (2002)	“Standard Test Method for Particle-Size Analysis of Soil”
ASTM	D449-98 (2003)	“Standard Specification for Asphalt for Damproofing and Waterproofing”
ASTM	D638-03	“Standard Test Method for Tensile Properties of Plastics”
ASTM	D698-00e1 “Standard Test”	“Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³))”
ASTM	D746-04	“Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact”
ASTM	D751-00	“Standard Test Methods for Coated Fabrics”
ASTM	D882-02	“Standard Test Method Afor Tensile Properties of Thin Plastic Sheeting”
ASTM	D854-02	“Standard Test Method for Specific Gravity of Soil Solids by Water Pycnometer”
ASTM	D994-03	“Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)”
ASTM	D1004-03	“Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting”
ASTM	D1140-00	“Standard Test for Amount of Materials in Soils Finer than the No. 200 Sieve (75-um)”

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

ASTM	D1204-02	“Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature”
ASTM	D1505-03	“Standard Test Method for Density of Plastics by the Density-Gradient Technique”
ASTM	D1556-00	“Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method”
ASTM	DI557-02e1	“Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2,700 kN-m/m ³))”
ASTM	D1587-00	“Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes”
ASTM	D1603-01	“Standard Test Method for Carbon Black In Olefin Plastics”
ASTM	D1682-64e1	“Standard Test Methods for Breaking Load and Elongation of Textile Fabrics”
ASTM	D1693-01	“Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics”
ASTM	D1751-99	“Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)”
ASTM	D1777-96 (2002)	“Standard Test Method for Thickness of Textile Materials”
ASTM	D2167-94 (2001)	“Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method”
ASTM	D2216-98	“Standard Test Method for Laboratory Determination of Water (Moisture) Content Of Soil and Rock by Mass”
ASTM	D2217-85 (1998)	“Standard Practice for Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants”
ASTM	D2321-00	“Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications”
ASTM	D2434-68e1 (2000)	“Standard Test Method for Permeability of Granular Soils (Constant Head)”
ASTM	D2487-00	“Standard Classification of Soil for Engineering Purposes (Unified Soil Classification System)”
ASTM	D2488-00	“Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)”
ASTM	D2850-03a	“Standard Test Method for Unconsolidated, Undrained Triaxial Compression Test on Cohesive Soils”
ASTM	D2922-01	“Standard Test Method for Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)”
ASTM	D2937-00e1	“Standard Test Method for Density of Soil in-Place by the Drive Cylinder Method”
ASTM	D3017-01	“Standard Test Method for Water Content of Soil and Rock In-Place by Nuclear Methods (Shallow Depth)”

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

ASTM	D3261-03	“Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing”
ASTM	D3350-02a	“Standard Specification for Polyethylene Plastics Pipe and Fitting Materials”
ASTM	D3776-96 (2002)	“Standard Test Methods for Mass Per Unit Area (Weight) of Fabric”
ASTM	D3786-01	“Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method”
ASTM	D3895-03	“Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry”
ASTM	D3963/03963M-01	“Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcement”
ASTM	D4218-96 (2001)	“Standard Test Method for Determination of Carbon Black Content in Polyethylene Compounds By the Muffle-Furnace Technique”
ASTM	D4253-00	“Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table”
ASTM	D4254-00	“Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density”
ASTM	D4318-00	“Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils”
ASTM	D4354-99	“Standard Practice for Sampling Geotextiles for Testing”
ASTM	D4355-02	“Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus”
ASTM	D4437-99	“Standard Practice for Determining the Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembranes”
ASTM	D4439-02	“Standard Terminology for Geosynthetics”
ASTM	D4491-99a	“Standard Test Methods for Water Permeability of Geotextiles by Permittivity”
ASTM	D4533-91 (1996)	“Standard Test Method for Trapezoid Tearing Strength of Geotextiles”
ASTM	D4546-03	“Standard Test Method for One-Dimensional Swell or Settlement Potential of Cohesive Soils”
ASTM	D4632-91 (2003)	“Standard Test Method for Grab Breaking Load and Elongation of Geotextiles”
ASTM	D4643-00	“Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Method”
ASTM	D4716-03	“Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head”
ASTM	D4751-99a	“Standard Test Method for Determining the Apparent Opening Size of a Geotextile”

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

ASTM	D4759-02	"Standard Practice for Determining the Specification Conformance of Geosynthetics"
ASTM	D4833-00e1	"Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products"
ASTM	D4873-02	"Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples"
ASTM	D4959-00	"Standard Test Method for Determination of Water (Moisture) Content of Soil By Direct Heating"
ASTM	D4972	"Standard Test Method for pH of Soils"
ASTM	D5035-95 (2003)	"Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)"
ASTM	D5084-00e1	"Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter"
ASTM	D5199-01	"Standard Test Methods for Measuring the Nominal Thickness of Geosynthetics"
ASTM	D5261-92 (1996)	"Standard Test Methods for Measuring Mass per Unit Area of Geotextiles"
ASTM	D5321-02	"Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method"
ASTM	D5397-99e1	"Standard Test Methods for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test"
ASTM	D5519-94 (2001)	"Standard Test Method for Particle Size Analysis of Natural and Man Made Riprap Materials"
ASTM	D5594-98	"Standard Test Method for Determination of the Vinyl Acetate Content of Ethylene-Vinyl Acetate (EVA) Copolymers by Fourier Transform Infrared Spectroscopy (FT-IR)"
ASTM	D5596-03	"Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics"
ASTM	D6990-01	"Standard Specification for Joint and Crack Sealants, Hot Applied for Concrete and Asphalt Pavements"
ASTM	D6693-03	"Standard Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes"
ASTM	F714-03	"Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter"
ASTM	F904-98 (2003)	"Standard Specification for Comparison of Bond Strength or Ply Adhesion of Similar Laminates Made from Flexible Materials"
CRSI		Concrete Reinforcing Steel Institute, Manual of Standard Practice

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

ICC		International Code Council
IBC	2003	International Building Code The following applicable chapter or sections of this code will be satisfied including references to modular building construction: Chapter 1: Administration Chapter 6: Structural Design Chapter 18: Soil and Foundation Other ICC associated codes and chapter(s) apply as follows:
IFC	2003	International Fire Code: Chapter 3: General Precautions against Fire Chapter 4: Emergency Planning and Preparedness Chapter 5: Fire Service Features
IMC	2003	International Mechanical Code: Chapter 3: General Regulation Chapter 12: Hydronic Piping Chapter 13: Fuel Oil Piping and Storage
IPC	2003	International Plumbing Code: Chapter 3: General Regulation Chapter 6: Water Supply and distribution Chapter 7: Sanitary Drainage Chapter 11: Storm Drainage
IFC	2003	International Fuel Gas Code: Chapter 4: Gas Piping Installations
NEC	2003	National Electrical Code: Chapter 1: General Chapter 2: Wiring and Protection Chapter 3: Wiring Method and Material Chapter 4: Equipment for General Use Chapter 5: Special Occupancies Chapter 6: Special Equipment Chapter 7: Special Conditions Chapter 8: Communications Systems
TAC 336		Texas Administrative Code, Title 30 Environmental Quality Chapter 336 Radioactive Substance Rules, Jan 2, 2004.
TCEQ		Texas Commission on Environmental Quality, "Application for License to Authorize Near-Surface Disposal of Low-Level Radioactive Waste," Revised January 23, 2004.
TCEQ RL		Rule Log No. 2003-037-336-WS, Background and Summary of Factual Basis for the Adopted Rules

**APPLICATION FOR LICENSE TO AUTHORIZE NEAR-SURFACE
LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE
Appendix 3.2: Codes and Standards**

Table 3.2-1. Reference Codes and Standards

		U.S. Department of Labor, Occupational Safety and Health Administration
29 CFR 1910		"Occupational Safety and Health Standards"
29 CFR 1926		"Safety and Health Regulations for Construction"
49 CFR 192		"Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards," applicable sections on HDPE fusion methods
API		American Petroleum Institute
API	650	"Welded Steel Tanks for Oil Storage"
AWWA	C600-99	"Standard for Installation of Ductile-Iron Water Lines and their Appurtenances"
ANSI/AWWA	C605-94	"Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water"
ANSI/AWWA	C200-97	"Steel Water Pipe - 6 in. (105mm) and Larger"