



### WHEN DO YOU NEED A PERMIT?

The Safety Codes Act requires that all contractors or homeowners in Alberta obtain permits before starting any work on projects covered by the current edition discipline specific codes and regulations.

When applying for a permit, remember that:

- The permitted work must comply with all applicable codes and regulations.
- Permits have expiry dates. Permit expiry dates can be located under general permit conditions section of the issued permit document.
- Most private sewage disposal system permits expire within 90 days.

### **BUILDING DISCIPLINE**

The Permit Regulation and the Building Code requires a building permit for any new construction, change in occupancy, alteration or renovation that is over \$5000 in prevailing market value and over 10 m2 with the following exemptions:

- PERMITS ARE NOT REQUIRED FOR THE FOLLOWING:
  - o construction of a building, including a renovation or an addition to a building, if
    - the building is not a stage or tent or overhead structure that is used or intended to be used in conjunction with a stage or tent,
    - construction, renovation or addition does not exceed \$5000 in prevailing market value, and
    - matters affecting health or life safety are not at risk;
  - o painting or decorating if
    - matters affecting health or life safety are not at risk, and
    - there is no structural change to the building;
  - o re-roofing or re-siding if
    - the re-roofing or residing is undertaken for aesthetic purposes or for the purposes of maintaining the building,
    - the re-roofing or re-siding is being replaced with roofing or siding of a similar type,
    - matters affecting health or safety are not at risk, and
    - there is no structural change to the building.
  - to replace or alter ducting serving a space heating appliance if
    - it is located in a single family residential dwelling and
    - there is no design change required to the heating and ventilation system;
  - construction of, including renovation of or an addition to, a stage if the platform of the stage is not at a distance greater than 1200mm above the adjacent surface on any side;
  - o construction of, including renovation of or an addition to, a tent that is
    - located on property that is designated for residential use by municipal land use bylaws and used as a single family residential dwelling, and
    - not used for commercial purpose, or
    - that is located on a campsite or campground or more than 3 m from any other structure if the tent
      - does not cover, and is not part of a group of tents that collectively cover, more than 60m2 of ground and
      - does not contain, and is not intended to contain commercial cooking equipment;
  - relocatable industrial accommodation if the relocatable industrial accommodation is at the relocation site for not more than 28 days;
  - Utility towers and poles, television and radio or other communications antennas or towers, except loads resulting from those located on or attached to a building;
  - water conveyance and control structures, except for associate building provided for occupancy;



- highway and railway bridges;
- mechanical process equipment and appliances in an industrial occupancy that are not required building services are not specifically regulated by the Building Code;
- o a building of low human occupancy associated with the operation of the <u>farm</u> on which it is located where the building is used for the
  - housing of livestock,
  - storage or maintenance of equipment, or
  - storage of materials or produce,
  - farm buildings may include, but are not limited to,
    - produce storage facilities
    - livestock and poultry housing,
    - milking centres,
    - manure storage facilities,
    - grain bins,
    - silos,
    - feed preparation centres,
    - farm workshops (for the farm on which the workshop is located, not a agricultural repair shop serving the public) and
    - horse riding, exercise and training facilities <u>not</u> used by the public (no bleachers, public food service etc.)

### **ELECTRICAL DISCIPLINE**

A permit in the electrical discipline is required to install, alter, or add to an electrical system.

Permits are required for all electrical installations.

These include, but are not limited to;

- Farm Buildings
- Hot tub/swimming pools
- Solar installations
- Renovations
- Garage
- Ac unit
- Sheds
- Service Upgrade

- New Service Connection
- Temporary Service
- Underground Service
- Basement development
- Skid units
- Relocatable accommodation
- Oilfield pump jacks

### **GAS DISCIPLINE**

A permit in the gas discipline is required to install, alter or add to a gas system.

Permits are required for all gas installations. These include, but are not limited to;

- Furnace replacements or installations
- Gas fireplace installations
- Grain driers (every time they are connected)
- Water heaters (including replacements if the venting changes)
- Pool Heaters
- Propane tank sets over 454 liters
- Tube Heaters
- Unit Heaters
- Piped BBQ lines
- Change of fuel type (propane to natural gas)



### **PLUMBING DISCIPLINE**

A permit in the plumbing discipline is required to install, alter or add to a plumbing system.

Permits are required for all plumbing installations. These include, but are not limited to;

- New Installations
- Adding any fixtures or taps requiring new piping

### PRIVATE SEWAGE DISCIPLINE

A permit in the private sewage discipline is required for a private sewage disposal system undertaking.

Permits are required for all Private Sewage systems. These include, but are not limited to;

- New System Installation
- Change of open discharge location
- Septic tank replacement
- Holding tank installation
- Outhouses with tank

CONSULT WITH OUR OFFICE FOR APPLICATION TO EXISTING BUILDINGS, AND TEMPORARY USE BUILDINGS



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PO Box 397
REDWATER AB T0A 2W0
Phone: (780) 942 3519
Fax: (780) 942 4321
www.redwater.ca



### **BUILDING PERMIT APPLICATION FORM**

			Development #:
Application Date: <u>DD / MMM / YYYY</u>	<u>( </u>	Estimated Project C	Completion Date: _DD / MMM / YYYY
Applicant Type:			on (Market Value) \$
days of issue of the permit, (b) is suspended or abandor	ned for a period of 120 days. An extension can be	be considered when applied for in writing prior t	he undertaking to which it applies: (a) is not commenced within 90 to permit expiry date.
**2 Sets of plans / specifications OR 1 set of PDF pla	ans / specifications & payment must accomp	any this application** (Residential projects	require New Home Warranty)
Owner Name:		Mailing Address:	
City:	Prov: Postal Code:	Phone:	Fax:
		Cell:	Email:
Owner's Signature / Declaration (Single Far "I hereby declare I am the owner of the premises in applicable Act and Regulations"	nily Residential Only) which the work will be conducted, and reside	or will reside on the property. I am doing the	work myself, and assume responsibility for compliance with the
Company Name:		Mailing Address:	
City:	Prov: Postal Code:	Phone:	Fax:
Cell:	Email:		
Contractor/Architect/Engine	er Name		Signature
Project Location in the Town of Redwater:			Work: ☐ not started ☐ in progress ☐ complete
Street Address:			oll #:
Legal Subdivision: Part of:	Section: Tov	wnship: Range: _	West of:
Subdivision Name:	Lot	t: Block:	Plan:
Directions:			
BUILDING TYPE:	TYPE OF WORK:	BUILDING USE:	BUILDING AREA IN SQ. FT.:
☐ Dwelling Unit	☐ New Construction	☐ Farm	Number of stories
☐ Detached/Attached Garage	☐ Relocation	☐ Single/Multi Residential	Main area
☐ Accessory Building	☐ Addition	☐ Commercial	2 <sup>nd</sup> floor
☐ Basement Development	☐ Renovation	☐ Industrial	Basement
☐ Deck	☐ Demolition	☐ Institutional	Garage
☐ Solid fuel burning appliance	☐ Change of Occupancy	☐ Oil & Gas	Total Area
Certification #	☐ Manufactured Home*	☐ Other (specify)	Deck
☐ Foundation Type	☐ Modular Home*		
	*CSA #	<u> </u>	Basement developed at time of construction?
☐ Other (specify)	Development #	·	☐ Yes ☐ No
		<u> </u>	
Description of Work:  Energy Compliance Method: Performar  *Manufactured Home – transportable in single or mult  *Modular Home – assembled at site in sections; section	iple sections; is ready for residential occupancy		
Payment Type: ☐ Cash ☐ Cheque ☐	☐ Interac ☐ M/C ☐ Visa		
Permit Fee: \$		The	Inspections Group Inc.
			12010 - 111 Avenue NW
·			12010 – 111 Avenue NW Edmonton AB T5G 0E6
+ SCC Levy*: \$  Total Cost: \$		Phone: (780)	Edmonton AB T5G 0E6

REMIT PAYMENT AND APPLICATION TO THE INSPECTIONS GROUP INC.

PLEASE CONTACT THE INSPECTIONS GROUP INC. FOR INSPECTIONS ALLOWING 2 – 5 WORKING DAYS NOTICE AND PROVIDE SAFE ACCESS.



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Fax: (780) 942 4321 www.redwater.ca



## **ELECTRICAL PERMIT APPLICATION FORM**

			Developmen	· #:
Application Date:DD / MMM /	YYYY		Estimated Project Completion Da	te: DD / MMM / YYYY
Applicant Type: ☐ Homeowner ☐ 0	Contractor	С	of Installation (Labour & Materia	1)\$
Applicant Type: Homeowner Control Homeowner Control Holder hereby certifies that this installation was days of issue of the permit, (b) is suspended or abandone	rill be completed in accordance with the	e Alberta Safety C	Act. A permit may expire if the undertaking to	which it applies: (a) is not commenced within 90
Owner Name:				
City:	Prov: Postal Cod			
Owner's Signature / Declaration (Single	a Family Pacidential Only)	C	Emai	:
"I hereby declare I am the owner of the plassume responsibility for compliance with	remises in which the work wil		nd reside or will reside on the prop	erty. I am doing the work myself, and
Company Name:		Mailing	ldress:	
City:	Prov: Postal Cod	e:	Phone:	Fax:
Call	Email:			
Cell:	EIIIaII			
Master Electrician Number	Master E	lectrician Nam	Maste	r Electrician Signature
Project Location in the Town of Redwa	iter:			
Street Address:			Tax Roll #:	
Legal Subdivision: Part of:	Section:	Township:	Range:	West of:
Subdivision Name:		Lot:	Block: Plan: _	
Directions:				
BUILDING TYPE:	TYPE OF WORK:		SERVICE INFORMATION:	
	☐ New Work			
☐ Single / Multi Family Dwelling	☐ Addition		Does this installation Require	a Service Connection
	☐ Renovation / Alterati	on	☐ Yes ☐ No	
☐ Commercial	Installation of service service upgrade)	e (panel / mete	SUPPLY SERVICE: Overh	nead □ Underground
Residential	☐ Service Connection			
☐ Industrial	☐ Improvements (A/C, etc.	, hot tub, bsm	ev, Service Information: Amp	s:
- Industrial	☐ Temporary Service		Volts	:
☐ Institutional	☐ Alternative Energy –	solar/wind		
_	Other		_ Phas	se:
Square Feet:	☐ Annual Permit			
Description of Work:			•	_
Payment Type:	Interac M/C Visa			
Permit Fee: \$			The Inspection 12010 – 1117	•
+ SCC Levy*: \$			Edmonton AE Phone: (780) 454 5048 T	3 T5G 0E6
Total Cost: \$	Receipt #:		Fax: (780) 454 5222 T	oll Free: (866) 454 5222
*\$4.50 or 4% of the permit fee maximum	\$560.00		www.inspectio	nsgroup.com

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# www.redwater.ca GAS PERMIT APPLICATION FORM

			Developmen	t #:
pplication Date:DD	/ MMM / YYYY		Estimated Project Completion Da	ite: DD / MMM / YYYY
he Permit Holder hereby certi	neowner	accordance with the Alberta Safety 20 days. An extension can be consic	Cost of Installation (Labour & Material) y Codes Act. A may permit expire if the undertaking to dered when applied for in writing prior to permit expiry do	which it applies: (a) is not commenced within 9
Owner Name:		Mailin	g Address:	
City:	Prov:	Postal Code:	Phone:	Fax:
		Only)	Email: Email: on the property. I am doing the work myself, and assure	
Company Name:		Mailin	g Address:	
City:	Prov:	Postal Code:	Phone:	Fax:
Cell:	Email:			
Installer's Number	Print In:	staller's Name	Installer's Signa	ature
Project Location in the				
			: Range:	_
			Block: Plan:	
			DIOUR 1	
TYPE OF	NUMBER OF OUTLETS:		CIAL/INDUSTRIAL APPLICATION ONLY:	PROPANE INSTALLATION:
OCCUPANCY:		Total DTU	CIALINDUSTRIAL APPLICATION ONLY.	
Residential	Furnace Water Heater	Name of Ga		
☐ Farm/Ranch	Fireplace		as Supplier	Tank Size
☐ Commercial	Dryer	DESCRIPT	TION OF WORK FOR ALL GAS PERMITS:	Serial #
☐ Industrial	Unit Heater  Range	<del></del>		
☐ Oilfield/Gas	Room Heater			☐ Vaporizer
☐ Institutional	Boilers			<ul><li>Refill Centre</li><li>☐ Service Line from Tank</li></ul>
	Conversion			to Building
Mobile	Replacement Appliance Secondary Risers			☐ Temporary Heat
☐ Manufactured	Barbeque			- │ │ ANNUAL PERMIT
	Other			
Payment Type:	· 	C □ Visa		venue NW
	it to a manifestum \$500.00	<u></u>	www.inspection	sgroup.com

#### PLEASE REMIT PAYMENT TO THE INSPECTIONS GROUP INC.



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## www.redwater.ca PLUMBING PERMIT APPLICATION FORM

			Development	#:
Application Date:	DD / MMM / YYYY	_	Estimated Project Completion Date	e:DD / MMM / YYYY
Applicant Type:  Hom	eowner		Cost of Installation (Labor & Material)	):ing to which it applies: (a) is not commenced within 90
			dered when applied for in writing prior to permit	
Owner Name:		Mailii	ng Address:	
City:	Prov:	Postal Code:	Phone:	Fax:
		Cell:	Email:	
"I hereby declare I am	Declaration (Single Family Resi the owner of the premises in which for compliance with the applicable	idential Only) ich the work will be conducte		property. I am doing the work myself, and
Company Name:		Mailiı	ng Address:	
City:	Prov:	Postal Code:	Phone:	Fax:
Cell:	Email:			
Installer's Number	Print Installer's	s Name	Installe	r's Signature
Project Location in the	he Town of Redwater:			
Street Address:			Tax Roll #:_	
Legal Subdivision: Pa	irt of: Section: _	Townshij	p: Range:	West of:
Subdivision Name:	_	Lot:	Block: P	lan:
Directions:				
TYPE OF OCCUPANCY:	NUMBER OF FIXTURES:	WATER	AND OR SEWER SERVICE:	PLUMBING DESCRIPTION OF WORK:
☐ Residential	Kitchen Sinks	Disco	onnect from Septic Connect to	
☐ Farm/Ranch	Basins Showers	 Muni	cipal Sewer	
☐ Commercial	Laundry		o.pu. C1.11	
☐ Industrial	Toilets			
	Washers		er and/or Sewer Services	
☐ Oilfield/Gas	Bathtubs Floor Drains			
☐ Institutional	Grease Traps		le Home/Factory Assembled	
☐ Mobile	Bidets/Water Fountains		•	
☐ Manufactured	Urinals		ling Connection	☐ ANNUAL PERMIT
	Other			
Payment Type: C	ash  Cheque  Interac  M	//C□ Visa		
Permit Fee: \$		_		ections Group Inc. 111 Avenue NW
+ SCC Levy*: \$			Edmont	ton AB T5G 0E6
		,	. ,	48 Toll Free: (866) 554 5048 22 Toll Free: (866) 454 5222
Total Cost: \$	K6	eceipt #:	www.insp	pectionsgroup.com
*\$4.50 or 4% of the ne	armit fee maximum \$560 00			



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PRIVATE SEWAGE DISPOSAL SYSTEM APPLICATION FORM

Application Date:DD / MMM	/ YYYY			Developme	nt #:
Estimated Project Start Date:	DD / MMM / YYYY		Estimate	ed Project Completion D	ate: DD / MMM / YYYY
Applicant Type:  Homeowner  The Permit Holder hereby certifies that this ins	Contractor stallation will be completed in accorda	ance with the Alberta Sa	Cost of Insta	allation (Labour & Materi	ial)\$hich it applies: (a) is not commenced within 90 day
of issue of the permit, (b) is suspended or aba	ndoned for a period of 120 days. An	extension can be consid	lered when applied for in writi	ng prior to permit expiry date.	
Owner Name:		N	Mailing Address:		
City:	Prov: P	ostal Code:	Phone	e:	Fax:
		Cell:		Email:	
Owner's Signature / Declaratio "I hereby declare I am the owner assume responsibility for complia	of the premises in which the	e work will be cond	ducted, and reside or v	will reside on the prope	erty. I am doing the work myself, and
Company Name:		N	Nailing Address:		
City:	Prov: P	ostal Code:	Phon	e:	Fax:
Cell:	Email:				
PSDS Installer's Number	Drint Drivata Coura	ge Installer's Name		la stalla d	c Cianatura
		ge mstaller's Name		mstallers	s Signature
Project Location in the Town of Street Address:				Tay Roll #	
					West of:
Directions:					
INSTALLATION:	TYPE OF WORK:		TREATMENT / DI	SPOSAL METHODS	
□ New installation			<u> </u>	APPLICABLE ITEMS	
☐ Alteration	☐ Commercial		Treatment Mou	und ∐ Disp	osal Field
Expected Volume of Sewage:	☐ Residential		☐ Sewage Lagoo	on	n (Surface) Discharge
	Number	of Bedrooms	☐ Sand Filter	☐ Pack	kaged Sewage Treatment Plant
☐ m3 per day	☐ Work Camp		☐ Septic Tank Si	ze	
☐ Litres per day	Number	of Men	☐ Sewage Holdir	ng Tank Size:	
☐ Gallons per day	☐ Other		☐ Other		
Description of Work:					
	COMPLET	THE ATTACHED	SITE EVALUATION	REPORT.	
Payment Type: Cash C	Cheque 🗌 Interac 🔲 M/C	; ☐ Visa			
Permit Fee: \$				The Inspection 12010 – 111 /	
				Edmonton Al	3 T5G 0E6
+ SCC Levy*: \$					Foll Free: (866) 554 5048 Foll Free: (866) 454 5222
Total Cost: \$	Receip	t #:		www.inspectio	nsgroup.com
*\$4.50 or 4% of the permit fee ma	aximum \$560.00				

PLEASE REMIT PAYMENT TO THE INSPECTIONS GROUP INC.

PLEASE REMIT FATIMENT TO THE INSPECTIONS GROUP INC.

PLEASE CONTACT THE INSPECTIONS GROUP INC. PRIOR TO COVER FOR INSPECTIONS ALLOWING 2 - 5 WORKING DAYS NOTICE AND PROVIDE SAFE ACCESS.

# **PSDS Application Summary Design Report**

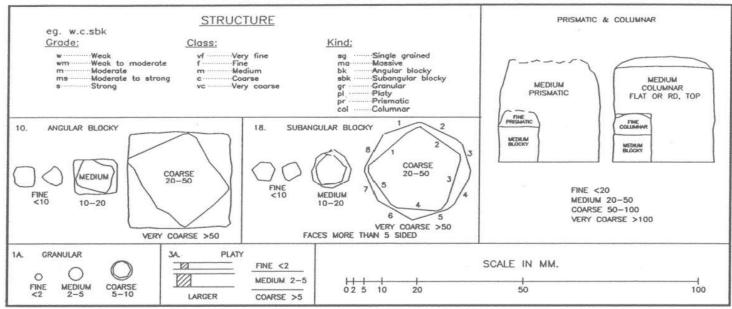
(Please Print Clearly)

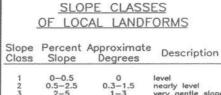
				Legal	Land I	Description	n			
1/4 section	Section	Township	Range	Wes	t of		L	.ot	Block	Plan
Address	Street			Muni	cipality	у		L	ot Size (acr	es)
				Deve	lopme	nt Details				
Туре:	☐ Reside	ential			Comme	ercial			☐ Other	
		Construction		1		ation/Repa			☐ Tempo	orary
Number of E	er of Bedrooms Number of Occupants Average Daily Flow Peak Daily Flow									
Additional S	izing Info	<u> </u>		ļ						
Auditional 3	izirig irrio.			Soil Ir	nforma	ation				
# of Test Pits	<u> </u>	_ (1 MINIMU	M for Open				or all	others)		
		_ (1 foot MII	-		_			,		
=		_ `					,			
		Shape					(Soil	Profile	Used for I	Design)
					m Det	ails				
Components	s to be used	(Check all ap	plicable)							
☐ Holdin	ng Tank	☐ Sand I	vlound		Open I	Discharge		•	n Gravel	
☐ Septic		☐ Gravit	•			ide		Cham		
☐ Treatn	nent Plant	☐ Pressu	ıre Field		Lagooi	n		Other	-	
Tank Size _		(Ga	llons)	Dose	Volum	ne		(Gal	lons)	
		(GP				ure				
_		 (Sq	•						· ·	
		(Ft)				ze				
Orifice Size		(incl	า)	Squirt	t Heigh	nt		_(Feet	t)	
Tank/Dlant	Make and	Madal								
-		e and Mode	 pl							
_		Make and I								
	,									
				Setba	ck Dis	tances				
Tank to Oc	cupied Buil	ding:		Tank	to Ne	arest Prop	erty l	_ine:		
Tank to Wa	ater Source	:		Tank	to Soil	Treatmen	t:			
	nent Compo	onent to Pro	operty Line	s (Mus	t be a	ccurate)				
North:		South:		East:			Wes	t:		
		onent to Wa							Type:	
		onent to Wa							Type:	
Soil Treatm	nent Compo	onent to Oc	cupied Bui	<u> </u>					(Nearest)	
				Addit	ional l	nformatio	n			
	NOTE: All	site evaluat	ions MUST	「 meet	Part 7	of the Sta	ndar	d of P	ractice.	
		e applicatio								

## Alberta Private Sewage Treatment System Soil Profile Log Form Owner Name or Job ID. Legal Land Location Test Pit GPS Coordinates LSD-1/4 Sec Twp Rg Mer Lot Block Plan Easting Northing Overall site slope % Vegetation notes: Slope position of test pit: Test hole No. Depth of Lab sample #1 Depth of Lab sample #2 Soil Subgroup Parent Material Drainage Depth Hori-Lab or Colour Gleying Mottling Structure Grade Consistence Moisture % Coarse Texture HT Fragments zon (cm) (in) Depth to Groundwater Limiting Soil Layer Characteristic, describe Depth to Seasonally Saturated Soil Depth to Limiting Soil Layer Limiting Topography Depth to Highly Permeable Layer **Key Limiting Features on System Design** Weather Condition notes: Comments: such as root depth and abundance or other pertinent observations:

Onsite Sewage System Site Evaluation Lot Diagram Sketch and Notes Project Name: Lot or Legal Description: Show the proposed ÎN location of the onsite sewage system and the following items indicating their distances from the proposed system: trees floodplains wells water sources surface water bedrock outcrops buildings property lines easement lines ditches or interceptors banks or steep fills driveways existing sewage systems underground utilities soil test pit and borehole locations Test Pit P1 □ drainage course slope direction borehole BH 1 Comments: Property line GPS coordinates: GPS coordinates of well: GPS coordinate of tank: GPS coordinates of soil treatment component corners:

### Figure 4: Diagrammatic representation of soil structure





0-0.5 .5-2.5	0.3-1.5	level nearly level
2-5	1-3	very gentle slopes
6-9	3.5-5	gentle slopes
10-15	6-8.5	moderate slopes
16-30	9-17	strong slopes
31-45	17-24	very strong slopes
46-70	25-35	extreme slopes
1-100	35-45	steep slopes
>100	>45	very steep slopes

SURFACE	STONINESS			
	Surface Area	Distance Apart (cm		
S0 non-stony S1 slightly stony S2 moderately stony s3 very stony S4 exceedingly stony S5 excessively stony	<0.01% 0.01-0.1% 0.1-3% 3-15% 15-50%	>30 10-30 2-10 1-2 0.1-5 0.1		

SLO	PE	POSITION
С	-	crest
u	-	upper slope
m	-	mid slope
	-	lower slope
t		toe
d	-	depression
1	-	level

U	RAINAGE
VR	<ul> <li>very rapidly</li> </ul>
R	- rapidly
w	- well
M	- moderately well
1	- imperfectly
P	- poorly
VP	- very poorly

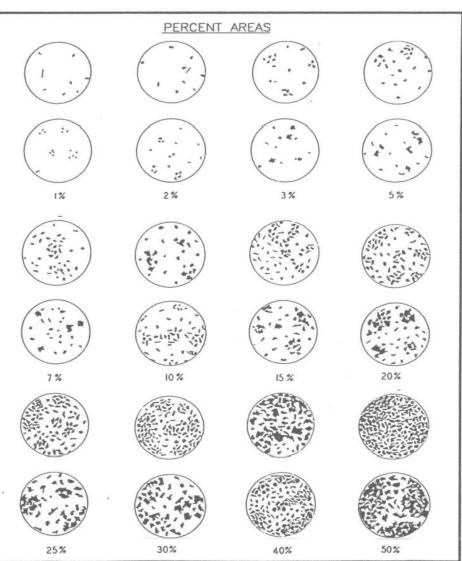


Table 10. Types, kinds and classes of soil structure.

Type  Blocklike - soil particles arranged around a point and bounded by flat or rounded surfaces  BK	Kind (Kind Code) Angular blocky (ABK) peds bounded by flattened, rectangular faces intersecting at relatively sharp angles	Structure Class and Code VF: very fine angular blocky F: fine angular blocky M: medium angular blocky C: coarse angular blocky VC: very coarse angular blocky  >50  Size¹ (m >5 10 20 5-10 10-20 20-50 20-50 >50	m)
	Subangular blocky (SBK): peds bounded by slightly rounded, subrectangular faces with vertices <sup>2</sup> of their intersections mostly subrounded	VF: very fine subangular blocky F: fine subangular blocky M: medium subangular blocky C: coarse subangular blocky VC: very coarse subangular blocky >50	
	<b>Granular (GR):</b> spheroidal peds bounded by curved or very irregular faces that do not adjoin those of adjacent peds	VF: very fine granular <1 F: fine granular 1-2 M: medium granular 2-5 C: coarse granular 5-10 VC: very coarse granular >10	
Platelike: soil particles arranged around a horizontal plane and generally bounded by relatively flat horizontal surfaces PL	<b>Platy (PL):</b> peds flat or platelike; horizontal planes more or less well developed	VF: very fine platy       <1         F: fine platy       1-2         M: medium platy       2-5         C: coarse platy       5-10         VC: very coarse platy       >10	
Prismlike: soil particles arranged around a vertical axis and bounded by relatively flat vertical surfaces.  PR	<b>Prismatic</b> ( <b>PR</b> ): vertical faces of peds well defined and vertices <sup>2</sup> angular (edges sharp); prism tops essentially flat	VF: very fine prismatic <10 F: fine prismatic 10-20 M: medium prismatic 20-50 C: coarse prismatic 50-100 VC: very coarse prismatic >100	
	<b>Columnar (COL):</b> vertical edges near top of columns not sharp (vertices <sup>2</sup> subrounded); column tops flat, rounded, or irregular	VF: very fine columnar <10 F: fine columnar 10-20 M: medium columnar 20-50 C: coarse columnar 50-100 VC: very coarse prismatic >100	
<b>Structureless:</b> no observable aggregation of primary particles or no definite	Single grained (SGR):	Loose, incoherent mass of individual prim particles, as in sands	ary
orderly arrangement around natural lines of weakness <b>MA</b>	Massive (MA):	amorphous; a coherent mass showing no evidence any distinct arrangement of soil particles; separa into clusters of particles; not peds	

Cloddy (CDY): not a structure; used to indicate the condition of some ploughed surface, grade, class, and shape too varied to be described in standard terms.

Consistence – moist so	vil
• Loose:	No intact sample can be obtained.
• Friable:	Structure breaks down with slight force between the fingers.
• Firm:	Structure breaks down with moderate force between the fingers.
• Extremely firm:	Structure breaks down with moderate force between the hands or
	slight foot pressure.
• Rigid:	Structure breaks down only with foot pressure.

The size limits refer to measurements in the smallest dimension of platy, prismatic, and columnar peds and to the largest of the nearly equal dimensions of blocky and granular peds.

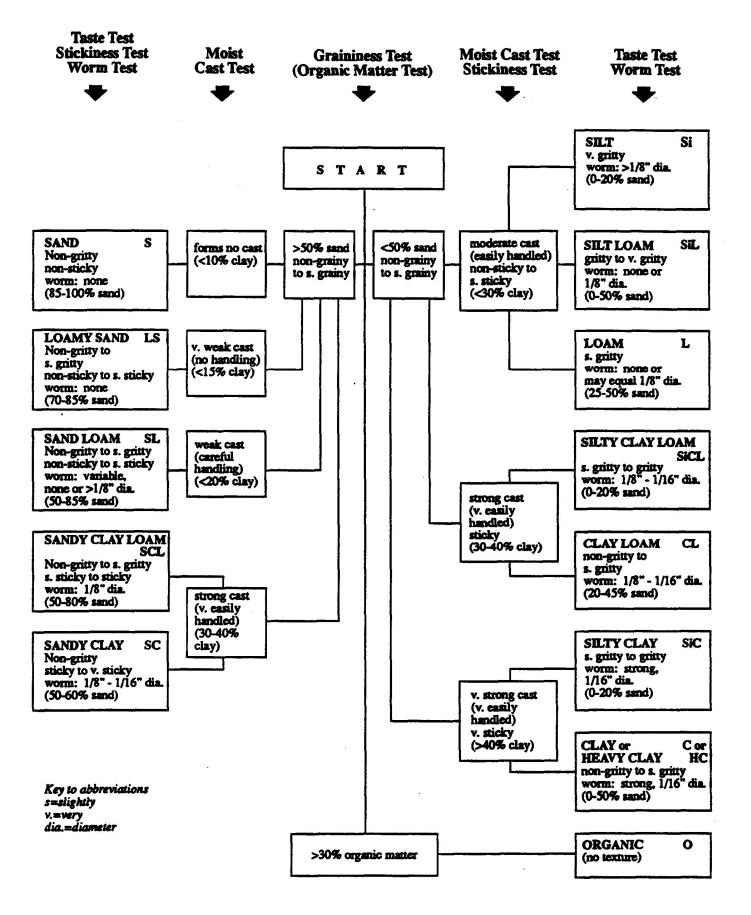
Definition of vertex (plural, vertices): the intersection of two planes of a geometrical figure.

# **Structure Grade Descriptions**

Code	Structure Grade Definition							
0	Massive /or single grained used to describe sands	This describes a soil that has no developed structure. There is no aggregation of primary particles or no definite orderly arrangement around natural lines of weakness.						
1	Weak	Peds are either indistinct and barely evident in place, or observable in place but incompletely separated from adjacent peds. When disturbed, the soil material separates into a mixture of only a few entire peds, many broken peds and much unaggregated material.						
2	Moderate	Peds are moderately durable, and are evident but not distinct in the undisturbed soil. When disturbed, the soil material parts into a mixture of many well formed, entire peds, some broken peds, and little unaggregated material. The peds may be handled without breaking and they part from adjoining peds to reveal nearly entire surfaces which have properties distinct from those caused by fracturing.						
3	Strong	Peds are durable and evident in the undisturbed soil, adhere weakly to one another, withstand displacement and separate cleanly when the soil is disturbed. When removed, the soil material separates mainly into entire peds. Surfaces of unbroken peds have distinctive properties, compared to surfaces that result from fracturing.						

# Mottling Descriptions

Parameter	Code	Description						
Abundance	Few	<2% of the exposed surface						
	Common	2-20% of the exposed surface						
	Many	>20% of the exposed surface						
Size	Fine	< 5 mm						
	Medium	5-15 mm						
	Coarse	>15 mm						
Contrast	Faint	Evident only on close examination. Faint mottles commonly have the same hue as the colour to which they are compared and differ by no more than 1 unit of chroma or 2 units of value. Some faint mottles of similar but low chroma and value can differ by 2.5 units of hue.						
	Distinct	Readily seen, but contrast only moderately with the colour to which they are compared. Distinct mottles commonly have the same hue as the colour to which they are compared, but differ by 2 to 4 units of chroma or 3 to 4 units of value; or differ from the colour to which they are compared by 2.5 units of hue but by no ore than 1 unit of chroma or 2 units of value.						
	Prominent	Contrast strongly with the colour to which they are compared. Prominent mottles are commonly the most obvious colour feature in a soil. Prominent mottles that have medium chroma and value commonly differ from the colour to which they are compared by at least 5 units of hue if chroma and value are the same; or at least 1 unit of chroma or 2 units of value if hue differs by 2.5 units.						



<b>✓</b>	SYSTEM DRAWING  ✓ Complete drawing of proposed system, layout of laterals, position and location of tank etc.												
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