Overview 8.1

Summary
This chapter contains procedures for the valuation of grain elevators, annexes, bins, and silos.

SAMA's 2015 Cost Guide provides directions for the valuation of property by the cost approach; it does not have the force of law.

Descriptions - Elevators and Annexes
Grain elevators are specially designed buildings that incorporate working space, storage space, and equipment required to receive, weigh, elevate, store, and load grain grown by farmers into railway cars and trucks. Grain companies in the business of buying grain from farmers for marketing, shipping, or processing must licence the elevator with the Canadian Grain Commission.

Annexes are additional grain storage buildings adjacent to an elevator. The equipment in the elevator is used to receive, weigh, elevate and ship the grain in the annex.

Construction materials include wood, concrete and steel. Elevator and annex sizes range from 25,000 to 3,000,000 bushels.

Licenced Elevators and Annexes
Grain elevators and annexes that are licenced by the Canadian Grain Commission as primary or terminal elevators.

Primary elevators are elevators licenced by the Canadian Grain Commission as a “primary elevator”, the principal use of which is the receiving of grain directly from producers for storage or shipping.

The majority of elevators in Saskatchewan are licenced as primary elevators.

Terminal elevators are elevators licenced by the Canadian Grain Commission as a “terminal elevator”, the principal uses of which are the receiving of grain on or after official inspection and official weighing of the grain and the cleaning, storing and treating of the grain before it is shipped.

Unlicenced Elevators and Annexes
Grain elevators and annexes that are not licenced as a primary or terminal elevator by the Canadian Grain Commission.

Units of Measure - Elevators and Annexes
The rates are based on dollar per bushel capacity. The capacity of an elevator or annex is the licenced capacity as reported by the Canadian Grain Commission. The metric conversion factor for all grains is 1 tonne = 35.71 bushels.

Capacity - Elevators and Annexes
Where an elevator or annex, or portion of an elevator or annex is not licenced by the Canadian Grain Commission, the capacity is determined as follows:

a) If an elevator or annex is not licenced but has been previously licenced with the Canadian Grain Commission and no structural changes have been made to the building, the previous licenced capacity may be used.

b) If an elevator or annex is not licenced but has been previously licenced with the Canadian Grain Commission and structural changes have been made to the building, estimate the change in bushels and adjust the previous licenced capacity.

Where an elevator or annex is licenced at an amount that does not reflect the actual storage capacity of the building, the capacity is determined as follows:

a) If construction specifications are available, calculate the capacity as 90% of the no pack capacity for elevators, 95% of the no pack capacity for concrete and wood annexes, and 99% of the no pack capacity for steel annexes.

b) If construction specifications are not available, calculate the capacity as the licenced capacity of a comparable elevator or annex of similar size and construction.

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

This information is available for purchase by contacting:

Technical Standards and Policy Division
Saskatchewan Assessment Management Agency
200 – 2201 – 11th Avenue
Regina, Saskatchewan S4P 0J8

Phone: (306) 924-8000
Toll Free: 1-800-667-SAMA (7262)
Fax: (306) 924-8070

Email: info.request@sama.sk.ca

Web Site: http://www.sama.sk.ca

Silo (S506) 8.2

Occupancy Description
These structures are cylindrical bins and tanks used for bulk grain or feed storage. The rates include the basic construction of the building including most items usually found in the general contract. The rates include foundation, ladder, chute and dome roof.

Add for gunite or epoxy interior finish and for access piping where present.

Structural Components

Concrete Stave (Rate $)

Diameter (ft.)		≤ 10	12	14	16	18	20	22	24	≥ 30
*Silo Unloader ($)										
Height (ft.)	≤ 30									
	40									
	50									
	60									
	70									
	80									
	90									
	≥ 100									

Concrete Poured (Rate $)

Diameter (ft.)		≤ 12	14	16	18	20	22	24	≥ 30
*Silo Unloader ($)									
Height (ft.)	≤ 30								
	40								
	50								
	60								
	70								
	80								
	90								
	100								
	110								
	120								
	≥ 130								

*Note: Silo unloader unloads silage material from the top of the silo. The costs include motor, auger and tripod, but exclude any electrical work such as hookup.

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Porcelain Silos

Diameter (ft.)	Silo Unloader Rate ($)	Height (ft.)	Rate ($)
≤ 14		23	
		32	
		41	
17		31	
		40	
		49	
20		28	
		32	
		33	
		38	
		41	
		43	
		50	
		59	
		68	
		77	
		87	
25		34	
		42	
		43	
		51	
		60	
		69	
		79	
		88	
≥ 31		70	
		80	
		89	

Access Piping: Piping that runs vertically on the outside of the silo. Its function is to load the silo with silage.

Height (ft.)	Rate ($)
≤ 30	
40	
50	
60	
70	
80	
90	
≥ 100	

Gunite or Epoxy Interior Finish:
A lining material placed on the inside of the silo that gives it an airtight seal.

Diameter (ft.)	Rate ($/linear ft.)
≤ 16	
20	
24	
≥ 30	

Roof Adjustment

Type	Rate ($/sq. ft.)
Flat	
No Roof	

Life Expectancy

Type	Life Expectancy (Years)
Concrete	
Porcelain	

Calculation Procedure

Description	No.	Page No.
a) Structure Rate	8.2	1-2
b) Accessories Rate (Access Piping)	8.2	2
c) Silo Adjustments (Interior Finish)	8.2	3
d) Unloader Adjustment	8.2	1-2
e) Roof Adjustment = (e_1 x e_2)		
e_1. Roof Area		
e_2. Roof Rate	8.2	3
f) Value Subtotal = (a + b + c + d + e)		
g) Incomplete Construction Factor	3.6	1
h) Replacement Cost New = f - (f x g)		

After the replacement cost new (RCN) has been calculated, the assessed value for commercial buildings and structures is determined using the calculation procedures in No. 3.2.

Porcelain Silo

Concrete Poured Silo

Concrete Annex (S830) 8.3

Occupancy Description
A concrete grain annex is located adjacent to a grain elevator and is a building specially designed to store grain. The annex is filled by using the elevator leg to lift the grain, and then using spouting or conveyors to move the grain from the elevator to the annex. The annex is emptied by a variety of clean-out systems onto a conveyor below the annex that returns the grain back to the elevator.

It has a concrete foundation, concrete pad with piles or compacted gravel base. Floor, walls, roof and tunnels are concrete. Bins are self cleaning or will have clean-out equipment installed. Equipment on top of the annex may or may not be enclosed. The reclaim conveyor at the bottom of the annex is typically enclosed in a concrete tunnel.

Concrete annexes are constructed using either the slip form or jump form construction method. The slip form construction method involves pouring concrete into a continuously moving work form. Jump form construction involves pouring concrete into a work form where the concrete is allowed to set in order to accept the next lift. Modern construction practices favour the slip form construction method.

Intersticing is the separation or space between structures. In the case of a concrete annex, intersticing refers to the space between concrete silos. Product may be stored in these spaces.

The rates include foundation, concrete pad, tunnels, concrete structure, steel work, and all equipment (conveyors, spouting, distributors, gates, clean out systems, electrical) that is required to service the building. Rates are based on the slip form construction technique and intersticed bins.

The rates do not include pilings, compacted gravel base, and large concrete pads greater than 30” thick.

Concrete Annex (S830) 8.3

Structural and Equipment Components

Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)
≤ 8,000		4.34
10,000	21.71	4.19
15,000	19.62	3.87
20,000	18.25	3.67
25,000	17.26	3.51
30,000	16.50	3.41
40,000	15.35	3.22
50,000	14.53	3.09
75,000	13.14	2.86
100,000	12.21	2.73
150,000	11.05	2.54
200,000	10.27	2.41
250,000	9.71	2.28
300,000	9.30	2.22
400,000	8.65	2.09
500,000	8.18	2.02
750,000	7.41	1.86
1,000,000	6.86	1.78
2,000,000	5.79	1.55
> 2,000,000	5.24	1.50
Life Expectancy ...	years	

Foundation: Compacted Gravel Base, $2.60 per cubic foot.
Bulk concrete pad and pilings: See Marshall Valuation Service, Section 51 pages 1 to 4

Jump Form Construction: Deduct $ /bushel.

Intersticing: Deduct $ /bushel where no intersticing.

Elevating Leg

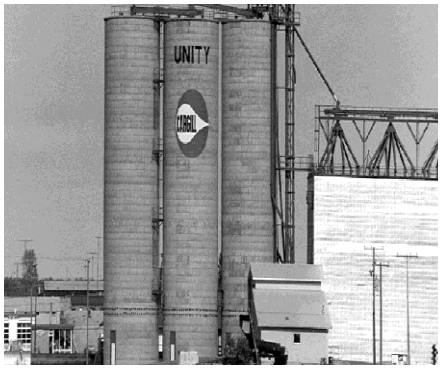
Description	Rate ($/unit)
Annex licenced capacity < 200,000 bushels; or individual silo licenced capacity < 100,000 bushels.	163,000
Annex licenced capacity ≥ 200,000 bushels; or individual silo licenced capacity ≥ 100,000 bushels.	272,000

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2 - a_3 - a_4)		
a_1. Structural Rate	8.3	2
a_2. Equipment Rate	8.3	2
a_3. Intersticing Rate	8.3	2
a_4. Jump Form Rate	8.3	2
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Value Subtotal = c - (c x d)		
f) Additive Features = (f_1 + f_2)		
f_1. Compacted Gravel Base	8.3	2
f_2. Elevating Leg	8.3	2
g) Replacement Cost New = (e + f)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.



Crib Elevator (S831) 8.4

Occupancy Description
A crib elevator is a specially designed building that incorporates working space, storage space, and equipment required to receive, weigh, elevate, store, and load grain grown by farmers into railway cars and trucks.

A composite elevator is to be measured the same as the ordinary elevator. The annex or offset bin storage is an integral part of the structure, therefore, its measurements and capacity are included with the elevator.

The rates include pilings, foundation, concrete pad or equivalent, crib structure, workhouse, drive shed, cleaning shed, and all equipment (pits, legs, gates, distributors, conveyors, spouting, dust collection system, clean out systems, car loading systems, electrical) that is required to service the building.

The rates do not include the elevator office and other buildings.

Crib Elevator (S831) 8.4

Structural and Equipment Components

It has a heavy concrete foundation. Outside walls are generally 2"x6" cribbing with bin partitions of 2"x4" cribbing with metal sheathing or wood siding. Cupola and driveway of frame construction.

Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)	Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)
≤ 10,000	14.54	3.64	80,000	5.59	1.39
15,000	11.80	2.95	85,000	5.46	1.37
20,000	10.28	2.57	90,000	5.34	1.34
22,000	9.85	2.46	95,000	5.21	1.30
24,000	9.45	2.37	100,000	5.09	1.27
25,000	9.23	2.31	105,000	5.01	1.26
26,000	9.09	2.27	110,000	4.94	1.24
28,000	8.78	2.20	115,000	4.87	1.21
30,000	8.50	2.12	120,000	4.81	1.20
32,000	8.29	2.07	125,000	4.72	1.18
34,000	8.09	2.02	130,000	4.65	1.17
36,000	7.88	1.98	135,000	4.58	1.15
38,000	7.68	1.92	140,000	4.52	1.12
40,000	7.47	1.88	145,000	4.45	1.11
42,000	7.33	1.83	150,000	4.38	1.09
44,000	7.20	1.80	155,000	4.32	1.08
46,000	7.06	1.76	160,000	4.28	1.07
48,000	6.93	1.73	165,000	4.22	1.06
50,000	6.77	1.70	170,000	4.19	1.04
52,000	6.69	1.67	175,000	4.13	1.02
54,000	6.60	1.65	180,000	4.08	1.02
56,000	6.53	1.63	185,000	4.03	1.01
58,000	6.44	1.62	190,000	3.99	1.00
60,000	6.35	1.58	195,000	3.94	0.99
65,000	6.14	1.54	200,000	3.89	0.98
70,000	5.93	1.48	250,000	3.57	0.89
75,000	5.72	1.44	≥ 300,000	3.34	0.83
Life Expectancy ... years					

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Crib Elevator (S831) 8.4

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2)		
a_1. Structural Rate	8.4	2
a_2. Equipment Rate	8.4	2
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Replacement Cost New = c - (c x d)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.

Concrete Elevator (S832) 8.5

Occupancy Description
A concrete elevator is a specially designed building that incorporates working space, storage space, and equipment required to receive, weigh, elevate, store, and load grain grown by farmers into railway cars and trucks.

It has a concrete foundation, concrete pad with necessary piles or compacted gravel base. Floor, walls, bin roof, workhouse, tunnels are concrete. Equipment on top of the elevator may or may not be enclosed. Bins are self cleaning or will have clean-out equipment installed.

Concrete elevators are constructed using either the slip form or jump form construction method. The slip form construction method involves pouring concrete into a continuously moving work form. Jump form construction involves pouring concrete into a work form where the concrete is allowed to set in order to accept the next lift. Modern construction practices favour the slip form construction method.

Intersticing is the separation or space between structures. In the case of a concrete elevator, intersticing refers to the space between the bins found within the elevator.

The rates include foundation, concrete pad, concrete structure, steel work, and all equipment (pits, legs, gates, distributors, conveyors, spouting, dust collection systems, clean out systems, car loading systems, electrical) that is required to service the building. Rates are based on the slip form construction technique and intersticed bins.

The rates do not include pilings, compacted gravel base, and large concrete pads greater than 30” thick.

Concrete Elevator (S832) 8.5

Structural and Equipment Components

Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)
≤ 8,000		7.72
10,000		7.44
15,000		6.97
20,000	28.24	6.63
25,000	26.72	6.37
30,000	25.53	6.20
40,000	23.78	5.92
50,000	22.48	5.68
75,000	20.32	5.32
100,000	18.92	5.06
150,000	17.08	4.72
200,000	15.93	4.54
250,000	15.05	4.37
300,000	14.38	4.24
400,000	13.40	4.03
500,000	12.65	3.90
750,000	11.44	3.64
1,000,000	10.66	3.48
2,000,000	8.96	3.09
> 2,000,000	8.10	2.96
Life Expectancy ... years		

Foundation: Compacted Gravel Base, $2.60 per cubic foot. Bulk concrete pad and pilings: See Marshall Valuation Service, Section 51, pages 1 to 4

Jump Form Construction: Deduct $ /bushel.

Intersticing: Deduct $ /bushel where no intersticing.

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2 - a_3 - a_4)		
a_1. Structural Rate	8.5	2
a_2. Equipment Rate	8.5	2
a_3. Intersticing Rate	8.5	2
a_4. Jump Form Rate	8.5	2
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Value Subtotal = c - (c x d)		
f) Compacted Gravel Base	8.5	2
g) Replacement Cost New = (e + f)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.

Crib Annex (S834) 8.6

Occupancy Description
A crib grain annex is located adjacent to a grain elevator and is a building specially designed to store grain. The annex is filled by using the elevator leg to lift the grain, and then using spouting or conveyors to move the grain from the elevator to the annex. The annex is emptied by a variety of clean out systems onto a conveyor below the annex that returns the grain back to the elevator.

The rates include pilings, foundation, concrete pad or equivalent, crib structure, and all equipment (conveyors, spouting, distributors, gates, clean-out systems, electrical) that is required to service the building.

Structural and Equipment Components
It has a heavy concrete foundation. Outside walls are generally 2"x6" cribbing with bin partitions of 2"x4"cribbing with metal sheathing or wood siding.

Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)	Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)
≤ 10,000	3.27	1.73	90,000	2.75	0.99
15,000	3.00	1.64	100,000	2.75	0.93
20,000	2.84	1.57	110,000	2.75	0.92
25,000	2.77	1.49	120,000	2.75	0.88
30,000	2.75	1.45	125,000	2.75	0.86
35,000	2.75	1.40	130,000	2.75	0.86
40,000	2.75	1.38	140,000	2.75	0.84
45,000	2.75	1.33	150,000	2.75	0.84
50,000	2.75	1.30	160,000	2.75	0.84
55,000	2.75	1.26	170,000	2.75	0.84
60,000	2.75	1.21	180,000	2.75	0.84
65,000	2.75	1.18	190,000	2.75	0.84
70,000	2.75	1.13	200,000	2.75	0.84
75,000	2.75	1.09	250,000	2.75	0.84
80,000	2.75	1.06	≥ 300,000	2.75	0.84
Life Expectancy ... years					

Elevating Leg: Add $163,000/unit.

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Crib Annex (S834) 8.6

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2)		
a_1. Structural Rate	8.6	1
a_2. Equipment Rate	8.6	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Value Subtotal = c - (c x d)		
f) Elevating Leg	8.6	1
g) Replacement Cost New = (e + f)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.

Frame Annex (S835) 8.7

Occupancy Description
A frame grain annex is located adjacent to a grain elevator and is a building specially designed to store grain. The annex is filled by using the elevator leg to lift the grain, and then using spouting or conveyors to move the grain from the elevator to the annex. The annex is emptied by a variety of clean-out systems onto a conveyor below the annex that returns the grain back to the elevator.

The rates include pilings, foundation, concrete pad or equivalent, frame structure, and all equipment (conveyors, spouting, distributors, gates, clean-out systems, electrical) that is required to service the building.

Structural Components
It has exterior siding, concrete pad or piers and stringer foundation. Walls have studding 2"x6" - 10", at 12" - 16" on center, depending on the size and height of the annex. The inside wall sheathing is generally of shiplap or its equivalent. The outside walls have criss-cross rods. Roofs are shingled pitch.

Structural and Equipment Components

Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)
≤ 10,000	2.58	1.37
15,000	2.37	1.30
20,000	2.25	1.24
25,000	2.19	1.18
30,000	2.18	1.15
35,000	2.18	1.11
40,000	2.18	1.08
45,000	2.18	1.06
50,000	2.18	1.02
55,000	2.18	0.99
60,000	2.18	0.96
65,000	2.18	0.93
70,000	2.18	0.90
75,000	2.18	0.86
80,000	2.18	0.83
90,000	2.18	0.79
≥100,000	2.18	0.74

Life Expectancy: years

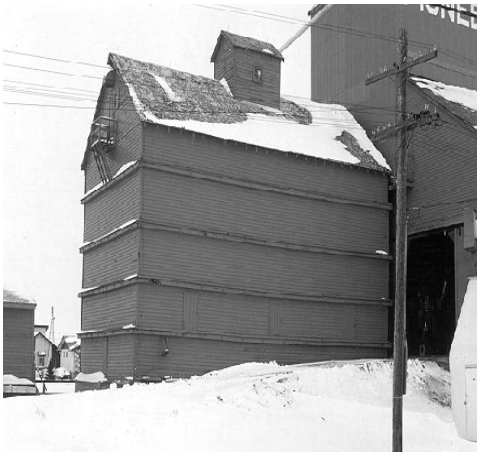
Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Frame Annex (S835) 8.7

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2)		
a_1. Structural Rate	8.7	1
a_2. Equipment Rate	8.7	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Replacement Cost New = c - (c x d)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.



Commercial Cylindrical Bin (S840) 8.8

Occupancy Description
Corrugated steel flat bottomed for dry storage of grain or other products. Heavy duty bins with thicker walls and additional reinforcements to withstand repeated filling, emptying, stirring and mixing. These bins are designed for commercial and industrial use.

Low Density Materials: Most grains (wheat, barley, oats), saw dust.
Average Density Materials: Fertilizer, sand and potash.
High Density Materials: Portland cement and limestone.

Structural Components

Volume (bushels)	Volume (cu. ft.)	Density ($/bushel)		
		Low	Average	High
≤ 1,000	1,244			
1,500	1,867			
2,000	2,489			
3,000	3,733			
4,000	4,978			
5,000	6,222			
6,000	7,466			
7,000	8,711			
8,000	9,955			
9,000	11,200			
10,000	12,444			
15,000	18,666			
20,000	24,888			
25,000	31,110			
30,000	37,332			
40,000	49,776			
50,000	62,220			
60,000	74,664			
70,000	87,108			
80,000	99,552			
90,000	111,996			
≥100,000	124,440			

Foundation: Add $ per cubic foot of concrete slab.

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Commercial Cylindrical Bin (S840) 8.8

Calculation Procedure

Description	No.	Page No.
a) Base Rate		
a_1. Bin Rate	8.8	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Foundation = (d_1 x d_2)		
d_1. Foundation Volume	3.3	1-2
d_2. Foundation Rate	8.8	1
e) Value Subtotal = (c + d)		
f) Incomplete Construction Factor	3.6	1
g) Replacement Cost New = e - (e x f)		

After the replacement cost new (RCN) has been calculated, the assessed value for commercial buildings and structures is determined using the calculation procedures in No. 3.2.

Commercial Hopper Bin (S841) 8.9

Occupancy Description
Smooth wall and corrugated steel hopper bins for dry storage of grain or other products. These are multi-purpose heavy duty bins with thicker walls and additional reinforcements to withstand repeated filling, emptying, stirring or mixing. These bins are designed to store and handle fertilizer, grain, feed and seed. Their versatility extends to coal, sand and other free-flowing, dry granular commodity for commercial and industrial use.

The rates include bin, support structure and concrete pilings.

Low Density Materials: Most grains (wheat, barley, oats) and saw dust.
Average Density Materials: Fertilizer, sand and potash.
High Density Materials: Portland cement and limestone

Structural Components

Volume (bushels)	Volume (cu. ft.)	Density ($/bushel)		
		Low	Average	High
≤ 500	622			
1,000	1,244			
1,500	1,867			
2,000	2,489			
3,000	3,733			
4,000	4,978			
5,000	6,222			
6,000	7,466			
7,000	8,711			
8,000	9,955			
9,000	11,200			
10,000	12,444			
15,000	18,666			
≥ 20,000	24,888			

Calculation Procedure

Description	No.	Page No.
a) Base Rate		
a_1. Bin Rate	8.9	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Replacement Cost New = c - (c x d)		

After the replacement cost new (RCN) has been calculated, the assessed value for commercial buildings and structures is determined using the calculation procedures in No. 3.2.

Commercial Hopper Bin (S841) 8.9

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Utility Bin (S842) 8.10

Occupancy Description
Steel and corrugated steel flat bottomed bins for dry storage of grain or other products. Light duty bins with thinner walls and minimal reinforcements. These bins are designed for general farm grain storage or light uses.

The rates include bin, manhole, door and concrete slab.

Structural Components

Base Rates

Volume (bushels)	Rate ($/bushel)
≤ 1,000	
1,500	
2,000	
2,500	
3,000	
4,000	
5,000	
6,000	
7,000	
8,000	
9,000	
10,000	
15,000	
20,000	
25,000	
30,000	
40,000	
≥ 50,000	

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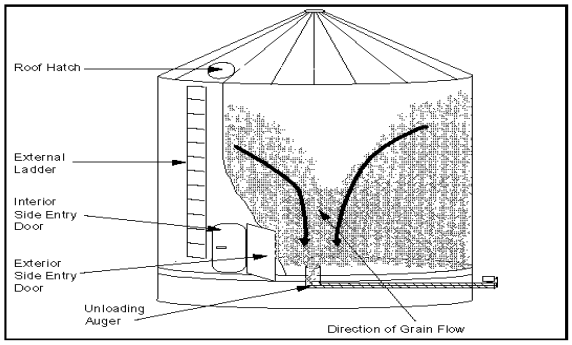
Utility Bin (S842) 8.10

Calculation Procedure

Description	No.	Page No.
a) Base Rate	8.10	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Percentage Incomplete Construction	3.6	1
e) Replacement Cost New = c - (c x d)		

After the replacement cost new (RCN) has been calculated, the assessed value for commercial buildings and structures is determined using the calculation procedures in No. 3.2.

FIGURE 1. Grain bin structure and direction of grain flow during unloading



Utility Hopper Bin (S843) 8.11

Occupancy Description
Smooth wall or corrugated steel hopper bins for dry storage of grain or other products. Light duty bins with thinner walls and minimal reinforcements. These bins are designed for general farm grain storage or light uses.

The rates include bin, hopper support structure and concrete footings.

Structural Components

Base Rates

Volume (bushels)	Rate ($/bushel)
≤ 500	
750	
1000	
1500	
2,000	
2,500	
3,000	
3,500	
4,000	
4,500	
5,000	
6,000	
7,000	
8,000	
9,000	
10,000	
≥ 10,000	

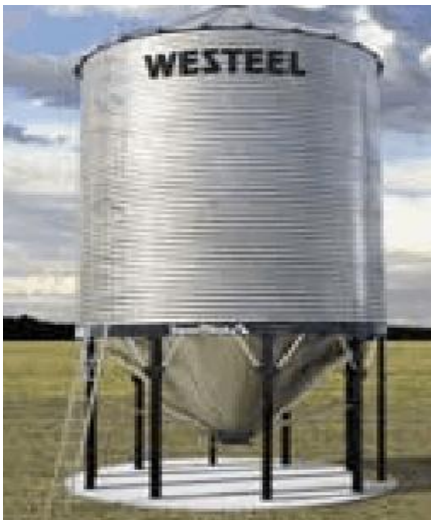
Calculation Procedure

Description	No.	Page No.
a) Base Rate	8.11	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Percentage Incomplete Construction	3.6	1
e) Replacement Cost New = c - (c x d)		

After the replacement cost new (RCN) has been calculated, the assessed value for commercial buildings and structures is determined using the calculation procedures in No. 3.2.

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Utility Hopper Bin (S843) 8.11



Steel Annex (S844) 8.12

Occupancy Description

A steel bin grain annex is located adjacent to a grain elevator and is a building specially designed to store grain. The annex is filled by using the elevator leg to lift the grain, and then using spouting or conveyors to move the grain from the elevator to the annex. The annex is emptied by a variety of clean-out systems onto a conveyor under the annex that returns the grain back to the elevator.

A steel annex has a flat bottom with a concrete foundation, piles or compacted gravel base, and concrete pad/floor. Its bin construction is typically commercial grade corrugated bolted steel. Bin sweeps are used to completely empty the bin. The reclaim conveyor is typically underground and may be enclosed in a concrete tunnel. A conveyor or spout from the elevator is used to load the annex. A distribution system and multiple conveyors may be present at properties with multi-bin arrangements.

The rates include pilings or compacted gravel base, foundation, tunnels, concrete pad/floor, steel structure, catwalks and ladders, and all equipment (conveyors, spouting, gates, clean-out systems, electrical) that is required to service the building.

Structural and Equipment Components

Structural Rate

Volume (bushels)	Structural Rate ($/bushel)	Volume (bushels)	Structural Rate ($/bushel)	Volume (bushels)	Structural Rate ($/bushel)
≤ 10,000	4.78	45,000	4.05	125,000	4.05
15,000	4.39	50,000	4.05	150,000	4.05
20,000	4.17	60,000	4.05	175,000	4.05
25,000	4.06	70,000	4.05	200,000	4.05
30,000	4.05	80,000	4.05	> 200,000	4.02
35,000	4.05	90,000	4.05		
40,000	4.05	100,000	4.05		

Equipment Rate

Volume (bushels)	Equipment Rate ($/bushel)	Volume (bushels)	Equipment Rate ($/bushel)	Volume (bushels)	Equipment Rate ($/bushel)
≤ 10,000	2.42	45,000	1.85	125,000	1.21
15,000	2.31	50,000	1.81	150,000	1.18
20,000	2.19	60,000	1.70	175,000	1.18
25,000	2.08	70,000	1.59	200,000	1.18
30,000	2.04	80,000	1.46	> 200,000	1.18
35,000	1.97	90,000	1.39		
40,000	1.93	100,000	1.29		

Life Expectancy: years

Steel Annex (S844) 8.12

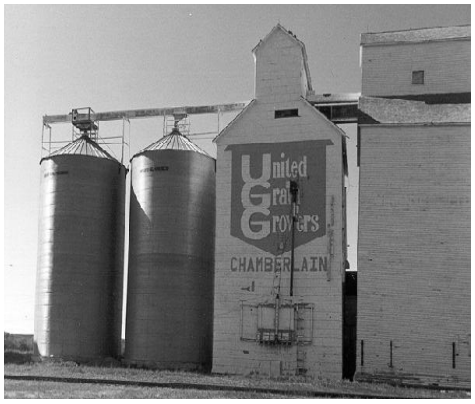
Elevating Leg

Description	Rate ($/unit)
Individual annex licenced capacity is < 100,000 bushels.	163,000
Individual annex licenced capacity is ≥ 100,000 bushels.	272,000

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2)		
a_1. Structural Rate	8.12	1
a_2. Equipment Rate	8.12	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Value Subtotal = c - (c x d)		
f) Additional Features (f_1)		
f_1. Elevating Leg	8.12	2
g) Replacement Cost New = (e + f)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.



Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Steel Hoppered Annex (S845) 8.13

Occupancy Description
A steel hoppered bin annex is located adjacent to a grain elevator and is a building specially designed to store grain. The annex is filled by using the elevator leg to lift the grain, and then using spouting or conveyors to move the grain from the elevator to the annex. The annex is emptied onto a conveyor beneath the hopper that returns the grain back to the elevator.

Hopper bottomed annexes have concrete foundation and piles or compacted gravel base. The area under the hopper is typically covered with gravel or concrete pad/floor. Bin construction is typically commercial grade corrugated bolted steel. Hopper construction is typically steel. The reclaim conveyor is typically above ground and hangs from the hopper. A distribution system and multiple conveyors may be present at properties with multi-bin arrangements.

The rates include pilings or compacted gravel base, foundation, tunnels, concrete pad/floor, steel structure, catwalks and ladders, and all equipment (conveyors, spouting, gates, clean-out systems, electrical) that is required to service the building.

Structural and Equipment Components

Volume (bushels)	Structural Rate ($/bushel)	Equipment Rate ($/bushel)
≤ 10,000	7.36	2.12
15,000	6.63	2.00
20,000	6.51	1.88
25,000	6.41	1.80
30,000	6.41	1.72
35,000	6.41	1.70
40,000	6.41	1.60
45,000	6.41	1.56
50,000	6.41	1.56
≥ 55,000	6.41	1.56

Life Expectancy: years

Portions of this chapter are not available for viewing due to licensing with Marshall and Swift. Therefore the classification guidelines, rates and factors etc. have been intentionally left blank.

Steel Hoppered Annex (S845) 8.13

Elevating Leg

Description	Rate ($/unit)
Individual annex licenced capacity is < 100,000 bushels.	163,000
Individual annex licenced capacity is ≥ 100,000 bushels.	272,000

Calculation Procedure

Description	No.	Page No.
a) Base Rate = (a_1 + a_2)		
a_1. Structural Rate	8.13	1
a_2. Equipment Rate	8.13	1
b) Building Volume	3.3	1-2
c) Value Subtotal = (a x b)		
d) Incomplete Construction Factor	3.6	1
e) Value Subtotal = c - (c x d)		
f) Additional Features (f_1)		
f_1. Elevating Leg	8.13	2
g) Replacement Cost New = (e + f)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.

Steel Bin Elevator (S846) 8.14

Occupancy Description

A steel bin elevator is a complex of hopper and/or flat bottomed steel bins that share common grain handling equipment. A steel bin elevator has specially designed buildings that incorporate working space, storage space, and equipment required to receive, weigh, elevate, store, and load grain grown by farmers into railway cars and/or trucks. Common applications for this code include general commercial grain handing and storage such as a licenced primary elevator or unlicenced elevator, seed cleaning/processing plant, dehy plant, pelleting plant, and feed mill.

Bins have a concrete foundation, piles or compacted gravel base. Flat bottomed bins have a concrete pad/floor. Bin construction is typically commercial grade corrugated bolted steel. Various types of systems are used to clean out flat bottomed bins. Reclaim conveyors are typically underground and enclosed in a concrete tunnel, however the conveyors may be above ground for hopper bins and hang from the hopper.

The bin rates include pilings or compacted gravel base, foundation, tunnels, concrete pad/floor, steel structure, catwalks, and ladders. The equipment rates include pits, legs, gates, distributors, conveyors, spouting, dust control systems, clean out systems, car loading systems and electrical systems that are required to service the building.

Structural and Equipment Components

Bins

Bin Volume (bushels)	Flat Bottomed ($/bushel)	Hopper Bottomed ($/bushel)
≤ 10,000	4.78	7.32
15,000	4.39	6.65
20,000	4.16	6.48
25,000	4.05	6.38
≥ 30,000	4.02	6.38
Life Expectancy ...	years	

Equipment

Elevator Volume (bushels)	Rate ($/bushel)	Elevator Volume (bushels)	Rate ($/bushel)
≤ 75,000	4.96	400,000	3.75
100,000	4.71	500,000	3.63
150,000	4.40	750,000	3.39
200,000	4.23	1,000,000	3.25
250,000	4.06	2,000,000	2.88
300,000	3.95	> 2,000,000	2.77
Life Expectancy:	years		

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Steel Bin Elevator (S846) 8.14

Calculation Procedure

Description	No.	Page No.
a) Base Rate		
a_1. Bin Rate	8.14	1
b) Bin Volume	3.3	1-2
c) Value Subtotal = (a_1 x b)		
d) Equipment = (d_1 x d_2)		
d_1. Equipment Rate	8.14	1
d_2. Elevator Volume	3.3	1-2
e) Value Subtotal = (c + d)		
f) Incomplete Construction Factor	3.6	1
g) Replacement Cost New = e - (e x f)		

After the replacement cost new (RCN) has been calculated, the assessed value for grain elevators and annexes is determined using the calculation procedures in No. 3.2.