

### Wood Moisture Solutions, Lumber Drying Workshop Complete

	Section and modules	Slides	Topics	Quizzes	Narration	
					Required	Optional
1	COURSE INTRODUCTION	19	2	1	10:32	01:05
1A	Course introduction	19	2	1	10:32	01:05
2	GETTING STARTED	37	2	2	23:10	00:00
2A	Why wood is dried	17	1	1	13:15	00:00
2B	Safety	20	1	1	09:55	00:00
3	WOOD, THE MATERIAL TO BE DRIED	77	5	5	35:43	10:58
3A	Features of trees and lumber	15	1	1	11:58	00:00
3B	Softwood structure	15	1	1	09:43	00:00
3C	Hardwood structure (optional)	20	1	1	00:00	10:58
3D	Wood variability and its impact on drying	17	1	1	09:56	00:00
3E	Specific gravity	10	1	1	04:06	00:00
4	PROPERTIES OF AIR AND WATER VAPOR	35	3	2	29:34	01:16
4A	Measuring temperature and humidity	21	2	1	14:58	01:16
4B	Psychrometrics	14	1	1	14:36	00:00
5	MOISTURE CONTENT AND ITS EFFECT ON WOOD	94	8	8	29:40	21:10
5A	Moisture content	13	1	1	08:15	00:00
5B	Oven-dry method (optional)	14	1	1	00:00	07:30
5C	Moisture content samples (optional)	31	2	2	00:00	13:40
5D	Water in wood, EMC	17	2	2	10:03	00:00
5E	Shrinkage and strength	19	2	2	11:22	00:00
6	WATER MOVEMENT IN WOOD	46	6	6	27:59	00:00
6A	Water movement in wood	21	3	3	09:36	00:00
6B	Factors affecting the drying rate	25	3	3	18:23	00:00
7	STRESS AND DEFECTS	77	5	5	44:25	16:26
7A	Stress development	19	2	2	09:52	03:40
7B	Stress relief, conditioning	20	1	1	09:46	12:46
7C	Defects due to wood-related factors	15	1	1	08:37	00:00
7D	Defects that develop in the kiln	23	1	1	16:10	00:00
8	SCHEDULES	249	16	12	1:41:27	1:11:28
8A	Air drying (optional)	54	4	3	00:00	21:55
8B	Types of schedules	17	1	1	16:29	00:00
8C	Lumber segregation and kiln startup	10	1	1	09:04	00:00
8D	Time-based schedules	18	1	1	15:11	00:00
8E	Moisture-based schedules (optional)	41	2	2	00:00	30:24
8F	Equalization	21	1	1	21:12	00:00
8G	Conditioning and cooldown	21	1	1	14:56	00:47

8H	Schedule examples	28	2	0	05:43	10:15
8I	Special schedules	28	2	1	12:04	08:07
8J	High-temperature drying	11	1	1	06:48	00:00
9	HOW KILNS OPERATE	183	10	10	2:09:16	0:15:23
9A	Kiln designs	26	1	1	13:36	06:57
9B	Steam	17	1	1	13:07	00:00
9C	Steam-heated kilns, steam delivery	24	1	1	21:18	00:00
9D	Steam-heated kilns, condensate return	19	1	1	12:12	00:00
9E	Direct-fired kilns (optional)	15	1	1	00:00	08:26
9F	Venting and humidification	18	1	1	17:36	00:00
9G	Fan systems	18	1	1	16:11	00:00
9H	Baffling	15	1	1	10:27	00:00
9I	Measuring airflow	19	1	1	15:28	00:00
9J	Selecting an air velocity	12	1	1	09:21	00:00
10	PREPARING A CHARGE	62	3	3	0:30:17	0:13:24
10A	Sorting in the sawmill	18	1	1	14:53	00:00
10B	Stacking	28	1	1	15:24	00:28
10C	Sorting at the planer (optional)	16	1	1	00:00	12:56
11	RUNNING A CHARGE	105	9	5	1:20:10	0:02:05
11A	Kiln loading	32	1	1	13:31	00:00
11B	Preparing to dry	16	1	1	13:18	00:00
11C	Measuring moisture content	27	4	1	19:08	02:05
11D	Running a charge	30	3	2	34:13	00:00
12	MAINTENANCE	89	6	6	1:07:36	0:00:00
12A	How the controller works	28	2	2	19:27	00:00
12B	Control system maintenance	28	2	2	24:50	00:00
12C	Mechanical maintenance	33	2	2	23:19	00:00
13	OPERATING EFFICIENTLY	55	4	4	0:35:12	0:02:00
13A	Cost	23	1	1	14:31	00:00
13B	Energy	19	2	2	10:57	02:00
13C	Minimizing downtime	13	1	1	09:44	00:00
14	QUALITY ASSURANCE	65	4	4	0:58:33	0:01:56
14A	Understanding data	24	2	2	22:11	01:56
14B	Continuous improvement	16	1	1	16:51	00:00
14C	Using the planer moisture meter	25	1	1	19:31	00:00